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PEDIATRICS

A MONTHLY JOURNAL
DEVOTED TO THE
STUDY OF

Disease in Infants and Children

EDITED BY

WILLIAM EDWARD FITCH, M.D.

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EDITORIAL

DIABETES IN CHILDREN.

Ordinary diabetes is comparatively rare in children while true diabetes is distinctly uncommon. Yet the disease in either of these forms is not rarely so infrequent as it was believed to be but a few years ago. However, true diabetes must not be confused with that type of glycosuria which exhibits itself by the transistory appearance of sugar in the urine, such as is seen in whooping cough, for instance, alimentary glycosuria is a defect of metabolism and of assimilation of carbohydrate foods. According to leading pediatricians true diabetes is a disease of hereditary origin, or rather a disease in which family influence plays an important part, as for example, the neuropathic epilepsy insanity and syphilis occurring in the parents or progenitors all exert a powerful factor to production in the young of succeeding generations. The disease is apt to occur in children of diabetics.

True diabetes may be divided into two groups, with no strict line of demarcation. The mild cases exhibit a considerable and persistent amount of sugar which disappears on the reduction or omission of carbohydrate food: Diet does not affect severe cases or if so, only to a small extent. Referring again to hereditary influence Caultey notes that while there is a racial tendency among Jews and Hindoos to diabetes, the malady is not especially frequent among Jewish children. The same authority states that in about one-fifth of the cases there is a family history of neuroses, gout, or tuberculosis. Several children in a family may be affected at about the same age. Caron has reported that three children of the same mother suffered from the affection at the respective ages of three and a half years and three months. The yearly frequency is much the same in the first ten years of life. Pritchard is of the opinion that simple alimentary glycosuria, which according to his view is a far more common symptom in infants than is generally suposed, may develop into the severe forms of diabetes. He thinks the conclusion is justified on theoretical grounds, because genuine diabetes is usually preceded by intermittent periods of glycosuria and such glycosuria is capable of being controlled by limiting the sugar. Further, it may be assumed that the continued strain on the glycolitic resources of the organism which the glycosuria implies, must on general principles lead to subsequent failure of the functions implicated. Both sexes are equally affected. Caultey thinks that a few cases may be due to pancreatic degeneration consequent or congenital syphilis. Lorand is of the opinion that the disease may be dependent on decomposition of meat foods inducing hyperacidity in the duodenum, especially if associated with degeneration of the Islands of Langerhans. J. Wallace Beveridge of New York who has made a close and extended study of diabetes in children thinks it is generally caused by stenosis of the pyloras, such stenosis being sometimes consequential and sometimes due to hyperacidity. The outset of diabetes is more sudden and its course more rapid than in adults. The younger the child the worse the prognosis. Acute diabetes usually occurs in persons under forty and not uncomonly in children or young adults. It is now conceded that the pancreaa has a profound effect on the production of glycosuria and undoubtedly the pancreatic hypotheis of the origin of diabetes the one that had most to commend it. As diabetes in children is so distinctly a disorder of metabolism, it follows that its treatment must be hygienic. Precautions against chills should be taken and diet regulated.

PREVENTION OF DIPHTHERIA IN CHILDREN

It would be a trite and obvious statement to make, that diphtheria is preponderatingly a disease of the young, although of course, such is the case. It is spread by direct contact sputum infected hands and articles, and by animals. The school habit of licking slates, pencils, and sucking the same sweets is responsible to a considerable extent for the spread of diphtheria. It is also a noteworthy fact that, as a rule, the disease is more common in rural than in urban districts but the tendency is not so marked as was formerly the case. It must too, be borne in mind that children, while themselves uninfected may be carriers of infection. This phase of the situation has only been brought prominently into the light within recent years, but that it is a factor of great importance in the spread of diphtheria cannot be doubted. Then again, animals as agents in the spread of diphtheria is a possibility that has been too frequently overlooked. Many birds are subject to disease which in some instances have been known to be transmitted to human beings. Parrots, turkeys and pidgeons are affected sometimes with a disease which in some of its features resembles diphtheria. Other domestic birds and fowls are not infrequently attacked by throat affections of a diphtheritice nature. Of the domestic animals, cats are undoubtedly the most dangerous in this respect; there appears to be no doubt that cats are subject to diphtheria sometimes of a very malignant form and consequently cannot fail to be a menace to the health of children of a household. When it is considered that a cat is more or less a constant inmate of a house, and how fond young children are of playing with these animals rubbing their faces over the cat's head and inhaling its breath, there can be no cause for wonderment that a pet cat suffers from diphtheria, and that children in close proximity to it should contract the disease. Caultey holds the view that diphtheria is somewhat more common in girls than boys because they are fond of pets. Indeed it may now be accepted that cats, rabbits, and birds may contract diphtheria and convey infection in human beings. This being so, it behooves boards of health, and heads of families to take all due precautions that diphtheria or other infectious diseases are not spread in this manner.

As a matter of fact the control of diphtheria rests almost wholly on preventive measures taken against its spread This statement is made despite the remarkable efficacy of antitoxin treatment, which by the way when employed in time is a preventive of the first order. It must likewise be borne in mind that diphtheria, as a rule, will not attack healthy integument, by the cutis or mucus membrane and that therefore the most effective preventive is to keep the mucus membrane in a healthy condition. The old adage prevention is better than cure applies with special force to diphtheria and in this additional emphasis is intentionally and insistently laid upon the menace of domestic animals in its spread.

CHRONIC INTESTINAL STASIS.

The teaching of Sir Arbuthnot Lane of London has awakened the profession to a realization of their duty and stimulated a new line of investigation, with regard to a large class of maladies associated with imperfect action of some part of the intestinal tract and of organs more closely related thereto, viz, general auto-intestinal-intoxication, chronic constipation, mucus colitis, pericolitis, chronic appendicitis, and other affections traceable to perverted function of these parts, which must with the light now before us be studied from a different pathological viewpoint. Lane in his efforts to discover the cause of this condition has demonstrated clearly that in health perfect body drainage is imperative. (1) After all, the intestinal tract is a very complete sewage system, and when the system is in in good working order all is well, but if any part of the sewage system gets out of order there is trouble ahead—auto intoxication, intestinal stasis, with the absorption of the end products of proteid digestion inaugurating a vicious cycle of events which is the forerunner of disastrous end results,—intestinal putrefaction, etc. Lane has demonstrated quite clearly that "intestinal stasis," as he terms this slowing of the drainage of the sewage, is the result of the abnormal fixation of certin portions of the drainage canal with a dropping of the tube on either side of the band or fixed point—producing the anatomical condition now known as Lane's kink. The kinking of the intestine prevents the free and easy passage of the intestinal contents through the gut, causing a "puddling" in the dependent portions which produces a damming back, a hindrance of the drainage. Lane refers to this state of retarded drainage as "Chronic intestinal stasis." He says "such an abnormal delay in the passage of the intestinal contents through a portion or portions of the gostro-intestinal tract results in the absorption of a greater quantity of poisonous materials than can be treated efficiently by the organs whose functions it is to convert them into products, as inocuous as possible to the tissues of the body." This absorption and auto intoxication, acording to Lane and others, leads to a general lowering of the body resistance with the concomitant increase in susceptibility to various disease.

William Seaman Bainbridge (2) a pupil of Lane, a few nights ago read a paper before the Medical ass'n of the Greater

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[1] London Lancet.

[2] Maine Medical Journal, August, 1913.

City of New York on this subject in which he reported some very interesting cases, and with Lane, he believes the stasis of the abdominal viscera, is broadly speaking the result of the assumption by man of the upright position. In early life, this ptosis according to Bainbridge is the result of an abnormal distention of the intestine, consequent upon too frequent feeding, or upon the continual use of an unsuitable diet. In later years it is brought about or accentuated by the erect posture which man assumes during the waking hours. The resulting pressure and strain may produce distinct changes, which may take the form of evolutionary bands, as Lane calls them. These bands are particularly without blood supply, and are not to be confounded with inflammatory adhesions, which are apt to have a generous blood supply. These evolutionary bands exist primarily for the advantage of the individual, for the purpose of supporting the intestines and preventing them from dropping downward. These bands do not develop with equal strength throughout, unfortunately, and as a consequence the bowel is held up firmly in some points and allowed to sag in others, the result being the angulation, or kink, at the point of support. The formation of these evoluntionary bands leads to kinking of the intestines at certain points of predilection, as demonstrated by Lane: (A) pylorus; (B) duodenojejunal junction; (C) different points along the terminal coil of the ileum; (D) appendix; (E) hepatic flexure; (F) splenic flexure; (G) sigmoid flexure; (H) rectum.

The symptoms which result from chronic intestinal stasis vary in different individuals, with the degree of obstruction, and with the concomitant "end-result" manifestations. They may be briefly catalogued as follows: (a) Headache, severe and frequent; (b) nausea, followed by retching or vomiting; (c) anorexia, almost constantly present; (d) loss of weight; e() coldness of extremities; (f) mental apathy; (g) constipation; (h) foul taste in the mouth, often accompanied by foul breath, carious teeth, and furred tongue; (i) abdominal distention, relieved by eructation, the passage of flatus, or an action of the bowels; (j) abdominal tenderness over the areas of fixation; (k) skin-staining; (l) breast changes, simulating chronic mastitis, in the early stages, and cystic degeneration in the later stages; (m) general muscular pain point of predilection in the calves of the legs and more or less marked stiffness in the joints.

THE TREATMENT OF CHRONIC INTESTINAL STASIS.

The diagnosis of this condition is arrived at by a careful weighing of the clinical symptoms, aided by careful, radiographic study of the abdominal viscera following a bismuth meal when the degree of interference with intestinal drainage and the location of the obstructing kink or band as well as the rapidity of the passage of the intestinal contents, is clearly observed. The treatment depends upon the extent of the kinks —and the resulting degree of stasis. Where the kinking of the intestines is marked Surgical intervention is resorted to, which Lane terms "Short Circuiting" the intestine. In the milder cases intelligent management will prevent the chronic types. In atonic or asthenic individuals—with general loss of muscular tone and deficient nervous energy with only slight degree of ptosis of the hollow viscera, Lane of London, Bainbridge and Beveridge, of New York, believe a complete cure may be affected by means of tonic regimen, abdominal support, rest and proper exercise, and the internal administration of Liquid paraffin (oleum mineralis Russicum) given in 1-2 to 1 ounce doses two or three times daily on the empty stomach. Unlike most aperients, the remedy does not lose its effects from prolonged use. The full lubricant effect is not obtained for several days. When the bowels begin to act regularly the dose may be very gradually diminished, and the minimum effective does then continued.

This oil, when pure, is a neutral, tasteless, colorless, odorless liquid, not liable to hydration, oxidation or soponification. It is extremely free from the reactions of chemical agents and passes through the alimentary canal unaltered and unabsorbed. Its action is a dual one—lubricant and protective—both of which are of great value in intestinal stasis. The lubricant action though appreciable in the jejunum and ileum, is greatest beyond the iliocecal value in the colon with its semisolid and solid contents, where full doses shorten the time of passage of the gastro-intestinal contents from the stomach to the rectum by as much as one-half.

The protective action tends to prevent any local irritation or abrasion—which might invite bacterial invasion and toxic absorption with resulting intestinal toxmia.

Eric Pritchard of London, according to Murray, (American Practitioner August 1913) gives a liquid paraffin emulsion to all infants suffering from tormina, enterospasm, or dysperistalsis, and believes there is nothing better to restore the bowel function in cases of intestinal intoxication in children. In the editor's own practice liquid paraffin (Usoline oil sp. gr. at 60 F. O. 885 free from sulphur, acid and impurities—free from bloom or fluorescence) has replaced all the usual aperient drugs given to children, including castor oil. In the mucous colitis of adults, generally merely an accompaniment of intestinal stasis, he has also had excellent therapeutic results from the administration of liquid paraffin.

In most cases the plain liquid paraffin may be given without any flavoring agent, though the addition of such agents as lemon and peppermint makes it still more palatable. Pritchard recommends the following for infants:

R. Liquid paraffin, m.xx (1.25 c. c.).
Benzoic acid,
Saccharin, of each, gr. 1-32. (0.002 Gm.)
Oil of cinnamon, m 1-16 (0.004 c. c.).
Decoction of Irish moss, up to ʒiii (4. c. c.).

Sig: One to four teaspoonfuls from three to six times a day.

PEDIATRICS

ORIGINAL ARTICLES

INFANTILE AND JUVENILE DIABETES*

BY LOUIS FISCHER, M.D.

Research has not yet enlightened the dark chapter of the etiology, for the origin and causation of infantile diabetes is still obscure. One teacher believes that the absence of the pancreatic forment during an attack of pancreatitis causes diabetes, another opinion prevails that a deficiency in the normal action of the liver cells results in diabetes.

We know that a disturbance of fat or carbohydrate metabolism is responsible for the glycosuria. That the internal secretions play an important role in influencing the metabolism of fat and casein and also the carbohydrates is recognized today. As the physiology of the adrenal system with the thyroids and parathyroids is better understood we will know more of the relationship which the internal secretion of the pancreas bears to the proper metabolism of sugar in the human economy.

The circulatory system contains distinct chemical agencies which affect the proper functions of the vital organs. We must also bear in mind the fact that the sympathetic or the vagus nerves have distinct influences on the blood current and they in turn indirectly or directly modify metabolism. That the liver is responsible for the metabolism of carbohydrates must be adduced from the fact that an excess of carbohydrates is deposited there in the form of glycogen., the glycogen to be drawn from the storehouse or liver when required.

The activity of the liver is regulated on the one hand by the adrenals and on the other by the pancreas. Adrenalin, produced in the adrenals, accelerates sugar production, mobilizes sugar from the glycogen repositories and increases the sugar production from other materials. On account of this, adrenalin injections cause glycosuria and in Addisons disease the sugar content of the blood is diminished. The pancreas, on the contrary, inhibits the production of sugar in the liver. Injections of extracts of the pancreas prevent the occurrence of adrenalin glycosuria, extirpation of the pancreas removes the inhibition over sugar production, permits, unrestrained, the accelerating action of the adrenals upon the liver, and, therefore leads to the most severe forms of diabetes. But the pancreas and the adrenals do not function independently. The pancreas is controlled by the thyroid, which inhibits its action. Therefore, alimentary glycosuria takes place in hyperthyroidism, and an increased tolerance for sugar in myxedema. The thyroid may itself be influenced by the glandular part of the hypophysis, its activity being increased. Hence in acromegaly, when there is increased functional activity in the hypophysis glycosuria may result. The parathyroids act upon the thyroids in the reverse manner. Besides this, the whole mechanism is under the control of the nervous system, which sometimes through the sympathetic, sometimes through the vagus, either promotes or inhibits the glycosuria. Bernard's puncture of the floor of the fourth ventricle, for example causes through sympathetic stimulation increased functional activity of the suprarenals, and, therefore, glycosuria. (Minkowski).

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*Read before the Medical Association of the Greater City of New York, October 20th, 1913.

Pathology: Anatomical lesions involving the pancreas have been reported by Opie of the Rockefeller Institute in 97 per cent. of all cases of diabetes autopsied, so also Weichselbaum in a series of 183 cases reports distinct lesions in the islets. Sufficient evidence exists to warrant the assertion that diabetes is caused by an absence of the hormone or internal secretion required for the oxydation of sugar due to the non-functioning of the islands of Langerhans.

Diabetes is by no means rare in children. It occurs far more frequently than is commonly supposed, but the condition escapes detection because of the difficulty in procuring specimens of urine from infants.

Pavy has reported 1365 cases among which eight were under ten years. Reden reported 1003 cases of which 50 were under ten years, 47 between ten and fifteen years. Saundby reported 2011 cases, fifteen below five years years, 58 below ten years. Haggenback reported a series of 77 cases all of them under one year.

Children seem to be better qualified for the assimilation of carbohydrates, chiefly starches and sugars, than adults. It is well known that the carbohydrates form one-half of the diet of the growing child, whereas the diet of an adult contains no more than one-third carbohydrates. Thus it would seem that the child's liver, pancreas and intestinal glands can perform proportionately more normal carbohydrate metabolism than the adults. The liver is larger and the liver cells are far more numerous in the child hence one could expect a greater capacity for the assimilation and digestion of the carbohydrates of which the starches and sugars form the bulk.

Overtaxing the system with an excess of sugar such as candy or honey has frequently been recorded as etiological factors in the causation of infantile diabetes.

Herbert Wilcox* reports eight cases occuring in the practice of Dr. Holt in which diabetes resulted from eating too much sugar.

Small quantities of milk sugar may appear in the urine of breast and bottle fed infants, especially when milk-sugar is added to the bottle-food. Sugar secreted under these conditions has no pathological significance, in so far as diabetes mellitus is concerned, but must be differentiated from grape sugar.

Transitory Glycosuria may be due to traumatism, especially is this true in traumatic conditions affecting the head. There is also glycosuria frequently noted in the acute febrile conditions. A transitory glycosuria may be due to an acute pancreatitis. Diabetes is occasionally associated with pertussis.

Strumpell has called attention to the occasional association of syphilis with diabetes calling it Erb-syphilis.

A noticeable feature of diabetes is its family tendency. Thus we find that neurotic individuals are predisposed and it is for this reason that the race question has arisen in diabetes.

Acidosis is generally considered to be a result of the diabetic condition. It is very probable, however, that an acid condition may have much to do with the causation of diabetes. This condition has been termed "acidemia"—hyperacidity or, rather, hypoalkalinity of the blood. It has no connection with the term "acidosis," this later being considered as occurring only when oxy-butyric acid or its congeners (acetone or diacetic acid) are present. Acidemia is an extremely common, every-day occurrence, and, unfortunately, it is all too often overlooked in routine work. A one-sided dietary in which meats, fish, fats, etc., predominate, produces organic acids, whereas a dietary of cereals, milk, vegetables and fruits tends to maintain the normal alkaline condition, by reason of the food-salts they contain in their best and most assimilable form.

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*Archives of Pediatrics, September, 1908.

According to the theory of Naunyn and his school the diminution of the alkalinity of the blood and tissues is at the root of the essential nature of the diabetic intoxication. This they regard as a true acid poisoning, the culminating point of which is eventually diabetic coma.

The most prominent symptoms noticeable are irritability and general indisposition, increased thirst with associated polyuria. In another class of cases both the extreme thirst and polyuria are wanting. Fever seldom occurs. Tenderness is sometimes present over the region of the pancreas. The knee-jerks are sometimes entirely absent during the height of the disease. When a tendency towards slow healing is noted in surgical conditions, then we should suspect glycosuria. Albumin when present is a serious factor. Wegeli found that in thirteen cases ending fatally, albumin was present. The presence of acetone and diacetic acid are very frequently found in infantile glycosuria. Convulsions may occur and at such times acetonuria will be present.

The urine may vary between one and one-half to ten pints in 24 hours. Polyuria does not necessarily accompany all cases of diabetes. The specific gravity varies between 1008 and 1050, the quantity of sugar varies between one and six per cent., depending on the time of the day and the type of food ingested. Albumin when present is usually a serious complication. The presence of acetone and diacetic acid are due to an imperfect fat and proteid metabolism. It indicates carbohydrate starvation and shows that the system demands carbohydrates. Coma is generally preceded by the presence of acetone and diacetic acid.

Gastro intestinal symptoms are prominent in very many cases.

Course of the disease. Saunders in the West London Medical Journal reports a case which died in coma three and one-half years after sugar was first found. A second case reported by him lived eight months. Fourteen cases on record by Bogoras lived one month, nineteen cases lasted six months, others have lingered from three to five years. In my own experience the cases have lasted, under strict prohibition of the starchy foods, and with other additional diet, several years.

An occasional case shows an interrupted course in which the disease appears cured, sugar will be absent for months and suddenly reappear as though no treatment had been instituted.

Heiman* reported a case in 1909 with favorable outcome.

We find glucose not only in the urine but we also find it in the blood. In addition to the excretion of sugar there may be oxybutyric and diacetic acids, frequently also acetone and betaoxybutric acid.

The examination of the blood in juvenile diabetes shows frequently a lipaemia. At Prof. Ortner's clinic Dr. Erich Stoerk found this fatty condition of the blood in many cases of diabetes and calls attention to the fact that the fundus of eye would frequently show symptoms.

Treatment: To treat diabetes intelligently each and every case must be studied individually. The food tolerated by one may prove disastrous to another. The aim in treatment should be to effect a tolerance for the carbohydrates, notably sugars and starches. Try plenty of fresh air, milk, oatmeal, potato, fresh fruits and honey. Fresh fruits and honey both contain levulose, they will be well born at times, and will not increase the sugar excretion, whereas they are contraindicated in many other cases and may do harm. Tomato, spinach or watercress soup, eggs, chicken, boiled beef, asparagus, cabbage, lettuce and almonds shouldf orm the bulk of the diet.

One of the prime factors is rest in bed. Avoid exercise and excitement, as the nerves play an important part in the etiology.

Drugs: Atropine, methyl bromide 1-120 grain three times a day for a child five years old, or sulphate of atropia from 1-200 to 1-100 grain three times a day. When there is marked acidosis then bicarbonate of soda 10 to 15 grain doses may be given several times a day. Intravenous injection 4 per cent. sterile soda bicarbonate solution if coma is present.

Vasomotor efficiency must be maintained by systematic hydrotherapy, thus cold water spray or shower in conjunction with massage may aid in stimulating the circulation and indirectly aid in the proper metabolism of the carbohydrates.

For an overworked school child, a change to the seashore or mountains will certainly prolong life, if not effect a cure.

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*Archive of Pediatrics, June, 1909.

ANTE-NATAL HYGIENE.

BY J. W. BALLANTYNE, M.D., F.R.C.P.E., F.R.S. EDIN.

Physician to the Royal Maternity Hospital, Edinburgh; formerly Lecturer on Ante-natal Pathology and Teratology in the University of Edinburgh and in the Medical Graduates' College and Polyclinic, London.

Ante-Natal hygiene may be said to have to do with all that makes for and tends to preserve the health of the infant before birth, with everything which prevents or resists the poisoning of the spring of life. It is, therefore, the great subject of prevention of disease and deformity before birth; it is also the little-developed, little-thought-on matter of ante-natal treatment. Ante-Natal Hygiene and Infantile Mortality.

At the National Conference on Infantile Mortality which met here in 1906 I had the opporunity of dealing with the ante-natal causes of that mortality, and I shall not now endeavor to go over again the ground then covered, but shall content myself with the passing allusion to it which I have just made.

Ante-natal Life

Ante-natal life occupies the period of nine months or so before birth. During seven of these months (from the third to the ninth inclusive) the unborn infant is growing rapidly in size and weight, is finding its nourishment in the mother through the important connecting organ called the placenta or afterbirth, is being prepared in every sense for the calls which are to be made immediately after birth, and is being fitted, in a word, for its post-natal existence of possibly seventy years; at the same time the infant has already in itself the power and the qualities of a life which is distinct from its mother's, for it is in no way a simple replica of its mother, nor is it a miniature of its father, nor, for that matter, is it even a blend of them both, being rather a composite photograph, so to say, of many ancestors with the possibilities of being made better or sadly marred in the developing or printing (to use the language of photography without of course accepting the literal meaning thereof.)

But there are two earlier months, the first and second of the nine, which come within the scope of the ante-natal life of the infant. These constitue the embryonic time and follow immediately upon conception; during these weeks the new being is fashioned from the comparative simplicity of the ovum or egg into the great complexity of the human embryo, clearly recognizable at the end of the second month as a babe in miniature. The general character of the life of these two months is development with its kaleidoscopic of cinematographic changes, and it differs greatly from that of the seven months which is mainly one of growth along lines already well defined.

The Mechanism of Ante-natal Life.

These two periods agree in this, however, that they are both conditioned by the life and health of the mother; their environment, so to say, is maternal. Even before the mother is conscious that she has conceived, certainly before she is sure that she is carrying a child in her womb, the close dependence of the new life upon the older one has begun. Not only that, but the mother's organs and tissues have begun to react to the stimulus of the tiny mass of intensely vital formative stuff which lies within. Physiology has only begun to realize how wonderful and how well worthy of the closest scrutiny is the inter-action between the infantile and the maternal organisms in these weeks and months of ante-natal existence; there is no older problem and no more fascinating modern theme than to discover how the bones grow in the womb and to investigate the whole of Nature's mechanism whereby she makes it possible for the mother to nourish and direct the growth and development of her unborn infant, and for the latter to so stimulate and encourage, so to speak, the mother's tissues and organs to increased effort and even to novel endeavour in order to meet the new demands made upon them.

Ante-natal Hygiene and Eugenics.

Even heredity and the study of the laws which govern the handing on of what we call good or bad traits and structural peculiarities from one generation to another contain no matters for thought and research more immediately important or more practically useful than do ante-natal hygiene and the nine momentous months which precede birth. I am glad when I hear of men and women, gifted with all the qualities which make research into life-problems both valuable to others and ennobling to themselves, throwing themselves with abandonment into the study of eugenics; but I often wish they would for a while suspend their efforts to reach the far-off eugenic goal and concentrate them on the hygiene of the nine months of pregnancy. I know well that it is said and believed that by the time an infant has reached the womb of its mother, its fate, eugenic or dysgenic, is fixed and irrevocable; but I know also that even the most hereditary of maladies may be ameliorated after birth, and there is reason in supposing that they may be much more ameliorated during the nine months before birth when the new organism is so plastic and alterable. But even if it be proved—it has not yet been proved—that the conditions of life in the nine months before birth have no influence either for good or ill upon hereditary maladies and deformities (using the word heredity in its strict sense, and not in the loose one of "anything which a child is born with"), even then there remains much to be done in ante-natal hygiene, for there cannot be the slightest doubt that many morbid influences come to play upon the body of the infant in the womb and that some at least of them may be prevented or their results cured.

The Destruction of Ante-natal Health by Syphilis.

Take that subject about which at the present time there is the most pressing need for frank speaking and full recognition; I mean venereal disease, as it is called, although it is better to concentrate one's thoughts specially on syphilis. It is painful to have to speak of it; it is revolting to have to study its effects; it is heart-rending to watch, as we doctors have to do, its maleficent and accursed mark being imprinted on the bodies of the mother and her child; but it is time, it is long past time, to tear away the evil which prudery and what is wrongly called common decency has thrown over this subject, and to show it in all its loathsome nakedness and horrible reality. We are terrified when we brush up against a man who has come from a smallpox patient's bedside; we shudder at the risk we run from the dried up sputum of the victims of consumption which may be floating in the air we breath; a thrill of horror runs over the whole land when there is news that a case of plague has reached Liverpool or that a man has died of cholera in London; but if we only realized it the results are far more deadly when a husband infects his wife with syphilis and the misery entailed is infinitely greater. To my mind the most pathetic words in medicine are syphilis insontium (syphilis of the innocent), just as the most hideous book on medicine is the so-called atlas of venerael diseases. Syphilis is sometimes spoken of as a hereditary malady; it is an insult to the name of heredity to call it so. It is a contagious disease which when it affects a woman about to become a mother, has the most certainly maleficent effect upon the fruit of the womb. It is a commonplace of the textbooks of medicine and midwifery that when a man infects his wife with this disease there may follow seven or eight abortions (each one of which is of course an ante-natal death), two or three deadbirths, and finally the birth of a few infants with the disease in so attenuated a form (the virus having, so to say, tired itself out) that they may continue to live for some years a damaged existence in the world. No wonder Fournier has been stung into using the expression "horrible mortuary tables,' to describe the statistics of ante-natal syphilis. One cannot use the words ante-natal hygiene when one or other or both parents are suffering from syphilis; there can be no such thing as hygiene then.

But if syphilis be the most of all the causes of ante-natal death and disease, it is in connection with it also that there comes the most hopeful outlook for treatment, preventive and curative. The cause of it, the Spirochaeta pallida, is among the most easily recognized of microbes, and there is a blood test of the presence of the disease which is reliable (the Wassermann reaction); so the malady can be easily diagnosed both after death and during life. Then, again, there are medicines (such as mercury and arsenic) which are effective in cutting short the malady's dire course; and these when given to the expectant mother avail for the infected child in her womb; there is no kind of ante-natal treatment more hopeful than that of syphilis of the unborn infant. But these are not the only things which should be and which may be done. With the triumphs of preventive medicine all round us, with typhus practically unknown now, with typhoid fever checked, with the sting taken out of diptheria, with small-pox so rare as to be almost unseen by the present generation of medical practitioners, with Malta fever banished, with the infected goats which harboured its cause, with tuberculosis giving way befor the regimen of the open window, with all these beneficent advances made or in the making, it is surely not beyond the wit of man to devise means for the prevention of syphilis. The greatest possible forward movement at the present time in ante-natal hygiene is the detection of syphilis and the prevention of its spread. It is even more important than the control of alcoholism. So numerous are the advantages which will accrue from its eradication that it is not too much to hope for the time when every patient will demand from a prospective son-in-law a pre-nuptial certificate of good health in which will be contained, even if it be not named in so many words, the assurance that the bearer is free from syphilis. If a man truly loves a woman and has regard for his sons and daughters yet unborn, he will not grudge the slight indignity of being asked to show proof of his own health; nay, he will not regard it is an indignity, but will voluntarily make it a matter of duty and an expression of affection. A more difficult task will be the eradication of syphilis acquired after marriage, for one must sorrowfully admit that this disease sometimes enters the family circle from without through the unfaithfulness of husband or wife. It will be well if the law would take cognizance of such post-matrimonial infections in dealing with actions for divorce, making the unfaithful partner in the union in some way or other to suffer for the injury inflicted the faithful spouse whom he (or she) has infected

Advances in Ante-natal Hygiene

Now, let me indicate, necessarily in the fewest words, some of the ways in which ante-natal hygiene may be fostered and the health of the unborn infant secured.

In the first place it is essential that authoritative facts regarding the amount of ante-natal disease and death be forthcoming; we must get to know the strength of the foe with whom we are fighting. This means the introduction of compulsory registration of stillbirths, and, if means can be devised, of abortions as well. It has been calculated that there occur about 19,000 stillbirths every year in England and Wales; but this is only an estimate, and the reality may be very much worse. At any rate, it is necessary to know, and for this purpose a means of registration or notification must be devised. The medical profession, as represented perhaps by a committee of experts in obstetrics and legal medicine, should be freely consulted before a Stillbirths Registration Bill is framed and introduced into Parliament; and I may say so, the medical practitioner should not be treated as he was and is under the Notification of Births Act, made responsible and fined for neglect in performing a public service but not rewarded even to the extent of a shilling for doing what is asked of him. I am prepared to suggest the main principles and lines of such an Act.

In the second place inquiries should be made into local conditions and especially into the sale of abortifacient drugs, where the stillbirth-rate is found to be high; and some sort of check should be put upon the present facilities for the obtaining of medicines and nostrums for the procuring of miscarriages.

In the third place the medical profession, as a whole, should take a much more active part in the supervision of pregnancies. The medical practitioner should endeavor to get into touch with the expectant mothers in his or her practice to a much greater extent and at a much earlier date in gestation than is done now. He should be ready to give advice regarding the early but often very troublesome disabilities and discomforts of pregnancy, and he should try to relieve all suffering so arising to the best of his ability. If he does this, patients will not be long in finding him out and in coming to him for help.

In the fourth place there should be supervision of the pregnancies of the poor as well as the middle and upper classes. All maternity hospitals should be furnished with pre-maternity or pregnancy wards for the reception of patients married or unmarried, who are suffering from one or other of the diseases of the pregnant state. Nearly fourteen years' experience of such a ward in the Edinburgh Royal Maternity Hospital has convinced me of its great value, for I have seen patients for whom no accommodation was provided elsewhere, come into that ward and get relief from suffering and the cure of their illness. I could tell of women there treated in whom in four or five previous pregnancies there had been premature births of dead infants to be chronicled, and in whom there was now the record of the birth of a healthy living infant at the full time.

In the fifth place, whilst fully acknowledging the great good which has come from the maternity benefit under the National Insurance Act (and the good will become more apparent and the inconveniences less marked as time goes on), I would point out that help, financial or otherwise, is often as sorely needed before as after the birth of the child. Indeed, rest before labour is, in my opinion, sometimes more essential than it is after it; and it has been proved that from the standpoint of ante-natal development and growth the release of the mother from the necessity of working for her daily bread just before her confinement greatly aids the unborn infant as well at the mother herself. It is a matter worthy of consideration whether, under the Insurance Act and utilizing the machinery of that measure, it would not be possible to lead expectant mothers to give notice of their pregnancies at early dates. This would give us a sort of voluntary registration of pregnancies, and consequently an indication of the number of them that come to nothing. Perhaps women would be led to do this if a more substantial maternity benefit were given to those mothers who made the announcement; with the establishment of large pregnancy departments in existing maternity hospitals it would be possible also to give these women rest and treatment before their confinements.

Finally, there are other ways in which the state of ante-natal health may be better cared for. There is, for instance, what may be called the hygiene of the honeymoon, including the realization of the possibility that the close of this period, when, acording to Dr. Johnson, "there is nothing but tenderness and pleasure," may coincide with the commencement of ante-natal life. Ignorance is accountable for many of the reproductive disasters which immediately follow marriage, and project their baneful effects far on into later life—ignorance, and its ally, excess. There are also advances to be made in the sphere of medicine and midwifery; the lives of many unborn infants may yet be saved by the discovery of better methods of treating the many diseases of pregnancy, which, while carrying danger to the woman herself, also bring risks to the new being in her womb. There is, for instance, the vaccination of expectant mothers during a smallpox epidemic, not only for their own sakes, but for the protection of their unborn infants. These, however, are purely medical or obstetrical questions, and I need not dwell on them here, beyond stating that they are of great importance, and that they cannot be properly faced without pre-maternity wards.

ANTE-NATAL HYGIENE*

Relation of the Hospital to the Hygiene of Pregnancy

BY JAMES LINCOLN HUNTINGTON, M.D.,
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It is the subject of this paper to show the development of a pregnancy clinic, which is an active part of a lying-in hospital, in a larger medical school centre; to show exactly what this institution is and what results have been obtained, and to show the cost of such an institution and its running expenses.

I wish to show by what means even better results might be obtained in a more nearly ideal pregnancy clinic in connection with a modern lying-in hospital.

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*National Conference Infant Mortality, London.

To show the various steps in the development of the work done at the Boston Lying-in Hospital in connection with the hygiene of pregnancy it is necessary to go back to the starting of the out-patient service in 1881. Through the firm establishment of this department and the careful supervision of the work done by the house officers by specialists in obstetrics, a splendid record has been established, and now some two thousand women are cared for in their homes every year by this department of the hospital.

The Instructive District Nursing Association began making ante-natal visits on some of the women in the out-patient department of the Boston Lying-in Hospital in 1901. The work gradually spread until in 1906 all these women were paid at least one visit by a nurse from the association some time between the date of application to the hospital and the confinement of the patient. Last year this association averaged about three ante-natal visits on each patient of the Boston Lying-in Hospital, out-patient department.

In 1909 Mrs. William Lowell Putnam, of the Infant Social Service Department of the Women's Municipal League of Boston, began the experiment of intensive pre-natal care of the patients registered at the Boston Lying-in Hospital, later to be confined in the hospital itself. These patients were visited by the nurse every ten days. This work was so successful and the need for this work so clearly demonstrated that in May, 1911, the pregnancy clinic of the Boston Lying-in Hospital was opened for patients.

The quarters of this department are in a tenement house almost opposite the main entrance of the lying-in hospital. It is a typical four-roomed apartment and rents for $3000 a year. The kitchen is the laboratory and waiting room. The large front room is the office and an alcove screened off is used for an examining room. The adjoining room is the main waiting-room and the back room beyond the kitchen is used for the palpation of patients. It has not been considered advisable to have all women cared for by the hospital patients in this pregnancy clinic, but all who apply for confinement in the hospital are referred to the pregnancy clinic for examination and treatment unless within four weeks of term.

The patients planning to be confined in their homes, however, come direcly to the pregnancy clinic, and remain under the care of this department until they start in labour, unless some serious complication arises which makes treatment in the hospital desirable. It is not true, however, that all the out-patients of the Boston Lying-in Hospital are patients of the pregnancy clinic, for in another section of the city is the branch station of the lying-in hospital, and as its patients live so far away from the hospital, it has not been considered good policy to require al these prospective patients to come to the pregnancy clinic. These patients are visited by the nurses from the Instructive District Nursing Association, and should any complications arise they are referred to the pregnancy clinic, so in this way there is some supervision of the hygiene of pregnancy of all the 2,000 patients now delivered annually in the out-patient department of the lying-in hospital and of nearly all the 900 patients that apply to the hospital for confinement within that institution.

Let us follow a patient through the course of her care in the pregnancy clinic. We urge the patients to come as early in their pregnancy as is possible, but as a matter of fact, few apply before the fifth month and most of them some time between the sixth and seventh months. The history of the patient is taken, both social and clinical, careful stress being laid on the previous obstetrical history. Should the patient have passed successfully through one or more conefinements with normal labour, she is sent into the back room for physical examination. The physician examines the urine, and takes the blood-pressure. the abdomen is examined, the probable date of confinement estimated. If pregnancy has developed sufficiently far, the foetal heart is examined and the pelvis is carefully measured. The patient is given careful directions as to the hygiene of pregnancy and is told to return in four weeks or sooner if any untoward symptoms arise. The name is then given to the nurse who makes the follow-up visits. The out-patients are visited in their homes at regular intervals by the nurses of the Instructive District Nursing Association. Many of The patients that are to report to the clinic should to be confined in the hospital are visited, however, by the nurse who is on duty in the pregnancy clinic, and this is the ideal arrangement for the best kind of service.

Should, however, the patient give a history of previous difficult labour or should she be a primipara, she is refered to the ront roam and a careful vaginal examination is added to the examination previously described. Should the pelvis show marked contraction and the patient be nearly at term, she is sent to the hospital for consultation. Should a patient show albumin in the urine or a high blood-pressure, if the symptoms are acute, she is sent to the hospital for treatment. If the symptoms are mild, she is told to return to the clinic for examination in three days, in five days, or at the end of a week, depending on the severity of the symptoms.

When the patient returns for her subsequent visits her urine is examined and her blood-pressure taken.

To show the work that we are doing, I have carefully reviewed the records of 1,000 cases, beginning with the first case that made application after the present system was fully established.

Of ths series 609 cases were delivered in the patients' own homes by student externes and the out-patient staff of the Boston Lying-in Hospital. Two hundred and thirty were delivered inside that hospital by the house staff

Tunring to the 609 cases delivered in the out-patient department, 608 were married and one only was single; 157 were pregnant for the first time, while 452 had had one or more previous pregnancies; 545 had normal deliveries. The average length of time that the mothers were under the care of the out-patient department after delivery was twelve to seventeen days; 600 mothers were discharged well.

The infants were under the care of the out-patient department for an average length of time of twelve to nineteen days. Five hundred and seventy-six were discharged well. There were fourteen till-births. Six died from other conditions. This would give a rate per 1,000 births of 22.9 still-births, which compares favourably with Boston's rate of 39.8 and Borough of Manhattan's 48.6.

As this paper is limited in length, I will not go fully into the statistics of the patients delivered in the hospital, but I feel obliged to state that this rate of stillbirths is not so satisfactory. The total for all these 839 cases delivered in the hospital and the out-patient department combined is 35.3 per 1,000 births. Three patients seen in pregnancy clinic subsequently developed eclampsia in the hospital, and one of these died. None of these three showed any symptoms of toxæmia while under observation in the pregnancy clinic.

On the other hand the seventeen cases showing symptoms of toxæmia and referred to the hospital escaped without serious trouble. It is only fair to state that of these 230 cases followed by the pregnancy clinic, for various reasons only sixty-five were visited by the pregnancy nurse.

On the previous pages I have described in detail the workings of an actual institution and the results obtained. Now I want briefly to sketch a more nearly perfect system. In this ideal pregnancy clinic all patients should apply without reference to the subsequent confinement, being guided as far as they are willing by the physician in charge. The nurse who receives the patient and assists the physician in making the examination should be in each and every case the nurse who will make the follow-up visits. This nurse should be trained to take the blood-pressure and make the nitric acid test of albumin, and carry with her on her visits to the patient's home the necessary apparatus for taking these observations. From the date of application the patient should be visited by the nurse or report to the clinic at least every two weeks. Patients failing to report to the clinic should be traced by the nurse. All patients when applying to pregnancy clinic should be given a complete physical examination. In the clinic the urine examination should include an examination of the sediment in every specimen showing albumin by the heat test. Such an ideal pregnancy clinic must be associated with a hospital providing beds and adequate obstetrical care for the graver complications of pregnancy and for operative obstetrics. It should also be associated with an out-patient service providing care for patients in their own home. What would be the estimated cost of such an institution, exclusive of the care of confinement and puerperium or the services of the physician during pregnancy? We have found the rental of the necessary quarters to house such an institution would be $300 per year; the initial expense of fittings and office furniture $100. This clinic would require three nurses to make necessary visits. If living in the hospital provided, such nurses could be obtained in Boston for $500 a year. Car fares for one nurse in 1912 amounted to $40.10; gas for heating water and lighting in winter cost $38.80; the services of a maid to clean the rooms cost in 1912 $42; stationery, drugs and instruments cost $120.75. So the total cost of such an institution caring for 2,000 cases annually would be $2321.55 for the first year and $2221.55 for subsequent years, as the wear and tear of office fittings is slight. Thus with each patient paying $1.16 the thing could be accomplished. It would seem that for a practically nominal cost to the individual the hygiene of pregnancy could be supervised intelligently in any community offering over 500 pregnancies for observation annually.

INFANTILE MENSTRUATION.

BY CHARLES C. MAPES, A.M., M.D.,
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Notwithstanding the prosecution of almost continuous clinical investigation and inquiry since the days of Hippocrates, and the multitudinous ingenious and fanciful theories advanced, in attempted elucidation of the phenomena known and designated as menstruation periodically exhibited by the genus homo femininis and certain of the lower animals, the assertion is made without fear of successful disputation that the etiology and physiology thereof still remain submerged in obscurity. Except for the exploitation of individual theoretical propositions, modern text books contain little information upon this subject not possessed by the ancients, the majority of the data being copied almost verbatim from the works of older writers.

The theories suggested to explain the occurrence of menstruation are so numerous and diversified that a comprehensive review thereof, with appropriate commentaries, would occupy much valuable space without adding anything of interest to present knowledge. However, brief outlines of a few of the most notable ancient and modern views may be permissible, and among these may be mentioned: The uterine congestion theory of Hippocrates; the lunar theory of Aristotle; the mechanical theory of Galen, and the chemical or fermentative theory specified by the Hebraic law.

Some of the more recent theories are: Tait believed menstruation was dependent upon an influence emanating from the oviducts, and Raymond claims it is due to a nervous mechanism, termed automotic ganglia, located in the walls of the uterus and Fallopian tubes. Robinson agrees that menstruation is governed by ganglia situated in the uterine walls and along the tubes, and closely connected with the ovaries; and that tubal motion constitutes the cycle of the menstrual period due to ganglia. During menstruation the tube has a very marked cycle of movement, its activity being greatest at that time, and its walls are dark blue and crimson with injected blood. When the Graafian vesicle is ready to burst, the fimbriae are enormously enlarged. As the ovary shrinks the tube recedes to its normal size, to begin a new cycle of motion. The marked organ in the whole process is the tube; menstruation might be called "the motion of the tubes."

Martin concludes that menstruation is a process directly controlled by a special nerve center situated in the lumbar portion of the spinal cord; that the changes in the uterine mucosa during menstruation are induced by catabolic nerves, and during the interval by anabolic nerves; that the menstrual impulses reach the uterus either through the pelvic splanchnics or the ovarian flexus—possibly both; that removal of the uterine appendages arrests menstruation by severing the menstrual nerves.

On the other hand Gorl believes the internal secretion of the ovary first appears at puberty, and leads to development of the secondary sexual characteristics. At the time of maturation of an ovum this secretion is so changed that it cannot enter into combination with antagonistic substances, and then menstruation occurs; that a change in the chemical composition of the secretion or disturbances caused by irregular maturation of the ova will produce menstrual irregularities, and even lead to formation of uterine myomas and cardiac disturbances. In other words, the condition produced may simulate shock. The internal secretion of the ovary is thought most important, and to be related to both general and local disturbances.

Another theory is that maturation of the Graafian follicle induces ovarian congestion with enlargement and increase of its blood vessels; thinning of the follicle surface and finally its rupture and escape; that the reflex influence thereof is responsible for the pelvic congestion, increased blood pressure and other symptoms associated with menstruation; that the increased pelvic circulation causes thickening of the mucosa, proliferation of the epithelial cells and glands, fatty changes, infiltration of leucocytes, with rupture of the blood vessels and extensive desquamation (Williams) of the uterine mucosa; that this is followed by restoration of structure by mitosis, in ten or twelve days the mucosa being completely regenerated.

According to the Mosaic law, a woman during menstruation and for seven days thereafter was presumed to be unclean, and those touching her garments, etc., were required to undergo purification. Pliny believed the odor of menstrual blood or contact therewith would cause new wine to immediately ferment, seeds to become sterile, buds to die, fruit to wither and fall; that it would destroy young plants, even iron and ivory being effected thereby!

It was at one time thought menstruation was not an inherent feminine function, but was acquired by heredity; that the phenomenon was unknown among primitive and savage races. i. e., being distinctly and essentially a product of civilization. Of course it is now known that practically all women menstruate, whether savage or civilized, as do also certain species of the quadrumana and other members of the animal kingdom.

While the Graafian follicles were recognized and described by de Graaf in 1665, the ovule was not discovered until 1827 by De Baer. Spontaneous ovulation was described by Coste (1837) and while Negrier (1832) attributed menstruation thereto, Gendrin (1840) was the first to assert the dependence of menstruation upon ovulation. Other writers concurred in this hypothesis, and for many years thereafter the impression generally prevailed that the establishment of menstruation must necessary be coincidental with vita sexualis, therefore that menstruation and ovulation were primarily and essentially interdependent. Later investigations, however, conclusively demonstrated that there necessarily exists no intimate relationship between the two phenomena; that ovulation may begin in early fetal life, and continue until dissolution of the individual; whereas, menstruation is comparatively uncommon before the age of thirteen years. There are on record numerous instances of pregnancy with normal accouchement years after advent of the menopause, and also before establishment of the menstrual molimen.

While menstruation appearing prior to the period when vita sexualis should normally be expected, i. e., thirteen to fifteen years, may properly be denomianted precocious, the phenomenon is observed with such frequency between the ages of eight and thirteen, that the writer suggests substitution of the term infantile for precocious where menstruation appears during infancy.

Numerous attempts have been made to explain the occurrence of infantile menstruation, but as in adolescent and adult life the etiology and physiology of the phenomenon remain practically unknown. It is claimed the researches of Crote, Pouchet, Raciborski, Longet, Sappex, et al., demonstrate that even in fetal life the ovaries contain numerous follicles, which "only await favorable occasion for development;" and autopsies have revealed visible follicles before the end of the first year. Based upon these premises it has been concluded that infantile menstruation owes its origin to precocious maturation of the Graafian follicles!

Runge examined fifty ovaries of newborn infants and young girls. In full term infants he recognized a proliferation of the follicles. In the first year of life, the growing follicles attained a decided size; minute cysts were occasionally seen and sometimes corpora albicantia were found. In the second year, the follicles were still further developed, some contained ova 135 micra in diameter and showed other signs of maturity; all ovaries at this age contained typical follicular cysts and corpora albicantia. In the third year, still further progress toward adult type was noted. The primordial follicles became diminished, and the stroma assumed an adult appearance. With advancing years changes occurred in corresponding degree, and the appearance of the ovary assumed the adult type. The author claims that it follows from these investigations that growth and maturation of the follicles in ovaries of the newly born and of children is a physiological procedure. All these processes, usually supposed to take place at or just before puberty, in reality appear normally in chronological and progressive order in the fetus, the newborn infant, and the child during the first years of life.

It becomes quite obvious that, like other explanatory theories hitherto suggested, the foregoing hypotheses only serve to partially elucidate the observed clinical facts. The premise is granted that if infantile menstruation were the invariable rule instead of the rare exception, precocious maturation of the Graafian follicles might afford a reasonable and understandable explanation of the phenomenon. On the contrary, however, no indubitable evidence has been presented demonstrating that the ovaries are solely responsible for the devlopment of the menstrual molimen in either infant, adolescent or adult feminity; and when it is remembered that infantile menstruation is a comparative rarity, the theory of precocious maturation of the Graafian follicles in explanation thereof apears distinctly fallacious. Furthermore, it must not be forgotten that menstruation has occurred in women whose ovaries were congenitally absent so far as could be determined from painstaking clinical investigation, and in whom sterility had persisted; that menstruation has regularly appeared after the surgical extirpation of both ovaries and ducti Fallopii; that normal menstruation has continued in women throughout the entire term of uterogestation; that women possessing apparently normal external and internal genitalia have never menstruated, although the mothers of several children; that, strange as it may seem, menstruation has reappeared years after the advent of the normal penopause.

The principal raison d'etre of this contribution, i. e., the idea the writer originally had in mind, was to present in abstract a few of the examples of infantile menstruation excerpted from the literature, or of which the details are personally known; the subject being suggested by the following abstract which appeared during the current month—October, 1913.

Smith attended a primipara of twenty-two who gave birth to a normal female child. Seven days thereafter the mother became greatly alarmed because of a sanguinolent discharge from the infant's vagina which persisted three days, ''attended by symptoms similar to those which occur in adults under like circumstances.'' Twenty-eight days later the phenomenon was repeated in every detail. The report shows that there was an ''unusual amount of milk in the infant's breasts.''

Ribble saw a child in whom menstruation began at the age of four days and appeared regularly thereafter. The breasts were enlarged and a ''milky fluid oozed from the nipples.'' The author refers to an example (Campbell) where a child of four years had menstruated every three weeks since birth, and another (Prochownick) in which menstruation appeared at the age of one year; death occurred at three, autopsy revealed ''signs of both ancient and recent ovulation.

Stein speaks of a child who began menstruating at the age of six months, and another where the menses appeared at fourteen months, continuing regularly thereafter; Lenz records menstruation beginning at four months and reappearing regularly every four weeks, the child exhibiting other evidences of precocity. Drake saw an infant three days old with vaginal hemorrhage which persisted five days, and Wishman mentions a child of eighteen months who had menstruated twelve times within sixteen months, other evidences of precocity being present.

Wales observed menstruation in an infant four days old, and Strecker records in detail an instance in which a child began menstruating irregularly soon after birth, the periods becoming regular a few months later. Similar examples are cited by Wells and Dewar, and Diament reports an example of regular menstruation at the age of two years.

Gengenbach records the establishment of menstruation in an infant aged ten months, which recurred with fairly regular periodicity thereafter, preceded by leucorrhea and pelvic pain. The author refers to one-hundred and thirty examples of precocious menstruation tabulated by Lenz (Archiv. fur. Gynak., 1913) and adds from recent literature nine cases evidently overlooked by Lenz in making his compilation, viz., those recorded by Raffaelli, Reim, Woodruff, Barband and Lefevre, Dotti (three cases), Mya and Funaro.

Ford speaks of an infant who began menstruating at the age of six months and continued regularly thereafter. Prior to establishment of the menstrual molimen the infant was restless and fretful, these manifestations entirely disappearing afterward. In his closing comment the author remarks: "So far as the literature in private and public libraries shows, there is but one recorded case of menstruation before the age of one year, and that showed the establishment of the menses just prior to that age. This case is unique in that the menses were established at apparently the earliest age on record."

Evidently the author mentioned (Ford) instituted but superficial examination of "the literature in private and public libraries" otherwise his investigations would have disclosed numerous examples where menstruation began shortly after birth and continued thereafter with more or less regular periodicity. Therefore, instead of being unique, his report differs in no essential respect from many others contained in ancient and modern literature.

Several instances of infantile menstruation have been observed in Louisville within recent years, two of which came to the personal notice of the writer, others being reported by Cecil, Bullock, et al., but as the details in connection therewith do not materially differ from other recorded examples, an extended report would add nothing to present knowledge of the subject.

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DIPHTHERIA, A RATIONAL CONSIDERATION.*

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It is significant to note that diptheria occurs mostly between the ages of two and ten years. ''Osler.' During these years the child's hygiene is not as carefully looked after as it might be. Frequently, especially among the poor, there is a younger child to look after. The older child, two years old, is allowed the freedom of the house. It plays and soils its hands, and is often placed at the table to eat, without first having its hands washed. After a meal it is set down to play again and the cleanliness of the mouth neglected. The lack of appreciation of the need of cleanliness of the mouth and throat is responsible for many cases of diphtheria.

A child, a little older, and one of school age, is careless in its association with older children. These children have the habit, in friendship, to take from each other's mouths, candies, cakes, fruits, etc. These objects of interchange are laden with the secretions of the mouths and throats of the children. Contact of these strange secretions, causes contamination, which is sometimes in that way a cause of diphtheria. The reason that children under two years of age are seldom if ever afflicted with diphtheria is because, being more or less helpless, they are given the attention they themselves are incapable of. Their diet is mostly liquid, which is easily swallowed without leaving a residue in the mouth and throat, as is the case when they become old enough to begin eating some solid food.

Children over ten years of age are able to apply oral prophylaxis and that acts as an important factor in preventing diphtheria from that age on.

Living in unventilated rooms is conducive to diphtheria. People living in rooms with windows never or seldom opened, can be said to be immersed in an aerial sewage. The rebreathing of the exhaled air and its contact with the mucous membrance of the mouth and throat has a debilitating effect upon

*Read before the Newark Medical League.

these tissues, their resisting power is diminished, they are prone to break down and disintegrate and liqufy.

The wear, tear and repair of tissues goes on everywhere in the body, the throat included. For the proper functioning of the mucous membranes of the throat, cleanliness is necessary. If this important branch of hygiene is neglected, there results an accumulation of waste in the throat. The secretions may be come filled with epithelium in all degrees of disintegration from the cell to its present minutest known portion, the bacterium.

There is moreover, even with the strictest attention to throat cleansing, constantly present in the throat of healthy individuals, a variety of bacteria among which are the Klebs-Loeffler Bacillus, so that even in perfect health we are not bacteria-free. If to these bacteria, we leave in our mouths and throats the unwashed particles of food, we create an excellent culture medium which is yet to be equalled by anything artificial. Oral prophylaxis from what has been said, ought to be clear. It is a good practice to teach children to take care of their mouths and throat especially after partaking anything to eat or drink. As a general rule after meals, they should be taught the habit of cleaning out any particles of food that may have lodged between the teeth, with a wood tooth brush. The second step should be a mouth wash. The third procedure should be a gargle if the child is old enuogh. The fourth link in this chain of oral prophylaxis is a copious draught of water.

The effect of vitiated air upon the mouth and throat, should impel the physician to insist upon fresh air for the home, procured through the open window.

I believe that a large majority of diphtheria cases can be prevented. But our poor neighbors cannot be benefited by any prophylatic preaching, while obliged to exist under our present social arrangement. In their home, there is a certain trinity that reigns supreme—poverty, neglect, and disease

Under treatment, the first measure that nearly everybody considers, is the subcusaeous injection of diphtheria antitoxin. This first thought has been so deeply rooted in the minds of the profession that to think differently is sure to be set down as heretical, and yet I believe that every case of diphtheria, in which the Klebs Loeffer bacillus is demonstrated, does not require an injection of diphtheria antitoxin. Of course, it will at once occur to you that a mild case in the beginning may become severe in the end. I will show you a little later, how you can inject with antitoxin every case of diphtheria however mild, with perfect safety.

To a limited degree, but only to a limited degree, we must substantiate Osler's theory of self limitation of disease. There is a continual process of wear, tear and repair going on in the body at all times., automatically, independent of any remedy that may be introduced into the system. The reaction that takes place in the human organism when a remedy is introduced and which we do not always see, and frequently misunderstand is different from the reaction in the test tube which we can always see, and nearly always understand.

The body, an animate organ, is not only affected by a remedy, but it itself reacts upon the remedy. Reactions in a test tube occur among the ingredients themselves, one reacting upon the other, the test tube unlike the body, not being affected.

With reference to spontaneous cure of disease it is a poor policy to adopt the expectant plan of treatment. It may be said that I use the expectant plan of treatment in diphtheria as far as antitoxin is concerned, but it must be remembered that the body itself is a generator of antitoxin and has plenty of it in stock. In mild cases the body can be stimulated by milder measures than hypodermic injections, which however can be made safely with my technic.

In diphtheria as in other diseases the system is clogged with tissue waste. Before any of this waste can be eliminated from the system, we must withhold all food as many days as is necessary or until the acute symptoms have disappeared, until the temperature, pulse, respiration, the site of the membrane and other signs are normal or nearly so. We cannot expect proper emptying of the system of its effete material, while filling of the stomach is going on. The toxins have poisoned everything in the body, so that digestion, absorption, and assimilation is carried on under toxic influences and causes increased intoxication, which is manifested by the aggravation of the symptoms. Many writers speak of the urgent necessity of supporting the system in the acute stage of disease by frequent and abundant feeding, they fear their patient is in danger of impending heart failure. This method interferes with the natural bodily forces, which are perpetually trying to keep the body normal. It is our artificial methods which are at fault. The last word has not been spoken in therapeutics by any means. We should regard the human body as a complete machine, capable of self adjustment.

The attendant will aid the system in freeing itself from toxins by not allowing any food in the beginning. At this time food is a burden to the organs and tissues, which are busy with elimination. It is detrimental now to block elimination, we should therefore be more concerned with relieving the system of waste than filling it with fresh food. When the symptoms begin to abate, the cereal soups such as barely, rice oatmeal, or crackers, zwieback or bread crumbs in soup may be allowed. Later, milk diluted with water. When the symptoms are normal a small regular diet is cautiously begun.

As an aid to elimination we should allow and encourage the patient to drink water freely. It may be administered plain or with sugar, or flavored with weak tea or coffee without the addition of milk. Milk because of its universal use, should receive special attention. Milk is an excellent food in health, but one of the worst foods in sickness. It is a solid food in liquid form. Milk is usually given when solid food is contra-indicated. Milk because it is a liquid, is also given when water alone is indicated, it is given to quench thirst and strengthen the body at the same time, but it does not comply with our wishes very often. The accommodation of a body to the food is a failure, it is the food that must be modified to the needs of the body. Milk because of its highly nutritious qualities is an excellent culture medium for bacteria, it should therefore be withheld from the diet from the very beginning of illness. Vomiting of curds of milk, should also be a sign of the injuriousness of milk at this time. When resumed, milk should be greatly diluted, or as a clear soup or broth.

In warm weather, or warm climates, the water may be cool but should never be administered cold. Cold water ingested must be warmed before it can be assimilated, this is done at the expense of the body heat, all of which is now urgently needed as fuel to fight the disease. Warm water and warm drinks are indicated, they aid the body by furnishing it with heat, by diluting and helping to carry off the toxins. Besides this constitutional effect of fluids in disease, they have a beneficial effect locally in throat affections. Fresh water like fresh air is destructive to disease germs. The ingestion of water or fluids washes away the bacteria and their products from their usual haunts in the mouth and throat where they multiply and destroy the tissues they call home, into regions, the gastro intestinal tract, where they meet foes of their kind but on strange ground under influences unfavorable to them, here they usually succumb.

It should hardly be necessary to say more, than to merely mention the fact in these hygienic days, that the human being is an aerial navigator. As long as we must have air, let us insist upon the best. Fresh air therefore is an essential in the sick room, everybody whether in health or sickness alike needs fresh air. It does its part in life impartially. It knocks for admission at every window, every wall, every partition, every obstruction. It rushes into the innermost recesses of the body, the air cells of the lungs, and there gives up its human life giving principle, oxygen, in exchange for our waste carbon dioxide; a greater benefactor to human life in nature. is not in existence. I dont know of a more neglected (element) in health and disease than fresh air. Its entrance into the system is marked by an increased number of red blood cells and a greater percentage of hemoglobin. The tonic influence of oxygen gives the body more power to resist disease. In its passage through the throat it is destructive to the bacteria it comes in contact with. Its entrance into the sick room means death to the germ, it fills every crevice, any germ projected into the air by expiration, is destroyed, the fresher the air, the more certain the destruction, yet this destruction is not wasteful it is rather a transformation, the air-waste which is a by-product of the human body, is detrimental to human life, if allowed to remain in the room unchanged. To the atmosphere it is excellent fertilizer, out of which oxygen is again formed. Ventilation therefore, should receive early attention in disease. The objection often made to opening a window on account of the entrance at the same time of dust, should be met by the fact, that although fresh air dust may spoil the looks of furnishings, stale air and dust may harbor disease germs and reinfect the patient or prove contagious to others who may venture in to the unventilated sick room.

While I am a firm believer in the necessity of fresh air in the sick room, draughts should be avoided, windows facing each other should not both be opened at once. A draught has been spoken of by some one as a delusion, it is not a delusion, it is a reality, it is the cause of much suffering, many diseases are ushered in by draught, some of which prove fatal. How much the window should be opened is to be determined by the season of the year, and the weather. In summer, open windows wide. in winter, open windows from the top, according to the degree of cold. It is advisable to remove dust catching clothing furnishing from the sick room, such as carpets, rugs, door or window curtains, dresser covers, pictures, etc. New and expensive window shades ought to be replaced temporarily. A cloth, moistened with water or any mild antiseptic solution should be passed over the walls and ceiling to remove the dust, before it is blown about the room and inhaled by the patient and others. The floor should not be swept, but wiped or scrubbed, or cleansed by the vacuum process. If fresh air is indispensable, then, the more the patient can get of it the better, therefore, move the patient into the largest room available, where light and sunshine may get in. Place the bed with the head away, and the foot towards the window. The patients feet and body are covered, while the head and shoulders are usually exposed, and liable to get cold. The high temperature in disease indicates that the body must be kept warm to successfully combat illness, this is greatly aided by sufficient covers. It is erroneously attempted to warm the body, by closing all the windows of the room, it is the hardest thing in the world to convince the family that the windows must be opened for the benefit of the patient, while they readily admit that fresh air is invigorating out of doors. With plenty of fresh air and abundant covers, the patient is kept warm and comfortable, and generally free from headache. The patient should be dressed loosely, in a few pieces of warm clothing. If the patient is a very young child the abdominal binder should be removed, and an extra warm shirt put on instead. Modern well known methods of isolation should be carried out as far as practicable. From the outset it should be the aim of the attendant to get rid of the intestinal contents. For this purpose I prefer in children, colomel in small doses, frequently repeated, followed by water or small amounts of citrate of magnesia solution after each dose, or aromatic fluid extract of cascara sagrada alone or combined with spiced syrup of rhubarb.

The removal of the toxic material from the intestines is a removal of burden, frequently a marked improvement is noted following a thorough emptying of the bowels. In these young children, cathartics may be supplemented by rectal suppositories, or injections of warm water with or without soap suds or any bland oil.

The most important medicinal treatment is that which aids elimination, for when the expulsion of toxic substances is under way restoration of the body to normal can be seen taking place. With the removal of the toxins the organs and tissues tend to resume their normal functions. The mucous membranes, with special reference to those more directly involved in diphtheria, namely, the mouth, throat, and gastro-intestinal tract, pour out their normal secretions which are inimical to disease and their products. A body aided medically and otherwise, is more able to cope with its foe, disease, than when left entirely to nature.

The recumbent position is a therapeutic aid in diphtheria, the work of the heart is made lighter, in that it is not necessary for it to force the blood through the body against gravity, the number of heart contractions are lessened, and each muscular effort is strengthened, the heart is not so easily tired, and the blood is more regularly sent to all organs and tissues, where it is utilized in defense of the body. The heart in diphtheria, as well as other diseases, and even in normal life, is the most important organ, aside from the local affection that we have to deal with. That fact is so well known, that two much anxiety concerning it leads to over-medication. The simplest way to benefit the heart is to order the patient to assume the recumbent position and institute elimination of the harrassing toxic substances from the system. Of medicines as heart tonics, infusion of digitalis holds first place with me.

We are all agreed that early treatment in diseases gives the best results. If diphtheria antitoxin is to be administered it should be given in the first few hours of the disease or as soon after as possible. Diphtheria antitoxin has been proven a boon to humanity. By it many lives have been saved that would otherwise have been lost. It not only diminishes, but stops suffering immediately on administration, in most cases, it frequently changes the abnormal to normal almost immediately, The harsh, brassy, laryngeal breathing in membranous croup often vanishes after an injection of diphtheria antitoxin. Since the introduction of diphtheria antitoxin, there have been fewer cases of membranous croup or laryngeal diphtheria reported. and tracheotomy is now rarely resorted to. Under the influence of antitoxin the membrane as a rule disappears rapidly, and what is left of it seems to be innocuous. It is interesting to note that the benefit of antitoxin is in proportion to its early use. This well known universal claim is evidenced clinically, and supported by statistics. The explanation is probably as follows: In the beginning of illness the patient is stronger and able to withstand more easily any strenuous treatment, than at any later period. A hypodermic injection of antitoxin is a strain on the system, particularly the heart. It is a stimulant to the system up to a point of toleration and beyond that it is a depressent. For its cafe administration, it is extremely important to know when the point of toleration is reached. This important fact has with very few exceptions been overlooked. Diphtheria antitoxin in introduced into the system with the idea of counteracting the toxins circulating in the body. It is supposed that the antitoxin injected enters into combat with the toxins elaborated by the disease, that may be so, but an injection of antitoxin does more than that, it stimulates the body to manufacture its own antitoxins, it is these auto-antitoxins that must finally be depended upon to overcome the toxins. The antitoxins introduced are limited in amount, whereas, the auto-antitoxins are automatically produced in incalculable numbers. It is at the expense of the body's strength that these defensive forces are formed, it is the body's tissue that furnish the material, out of which the curative elements are made, it is the body itself that cures, the antitoxin is but the stimulant. Early in disease the body is a storehouse, packed with material out of which may be formed any amount of auto-antitoxins. Disease in a body causes reaction, by which the body tries to overcome the disease, in other words the disease process itself stimulates the organism to produce anti-bodies or antitoxins, That is often sufficient to overcome illness, but frequently the symptoms or condition of the patient indicate that the patient has considerable difficulty in coping with the disease. In the former cases an injection of antitoxin is superfluous, while in the latter cases it is indicated. A timely injection will quicken the process of antibody formation and hurl these enormous reinforcements at one time upon the enemy, and thus by a single stroke turn the tide from sickness to halth. If the disease continues in an active stage, the body is constantly forced to keep up the fight, it's tissues are being used up to supply fighting material, the so-called antibodies, auto-antitoxins, phagocytes, leukocytes and many others. After the body has been depleted of much of this material for defense, an injection of antitoxin will not call forth the ready response for aid. The body now has not the strength to stand the stimulation that an injection produces, and therefore an injection is not so effective late in disease as at the beginning of illness.

To administer diphtheria antitoxin safely at all times one must first observe the following precautions, these precautions are applicable previous to all hypodermic medication. Get a history of the case, with special reference to any previous hypodermic medication particularly diphtheria antitoxin, and its effects at that time. Note the duration of the present illness, and the present condition of the patient. Mark the age. Make a thorough examination of the physical condition of the patient. Take the pulse, temperature, and respiration. In some case ascertain the blood pressure? Feel if the extremities are cold or warm. Take these and possibly other precautions, one of which is to have the patient lie down while injecting the antitoxin, it may lay on its back. A child must as a rule be held down by two people. I usually inject into the subcutaneous tissues of the abdomen, a few other regions may do as well. With the finger of one hand on the child's pulse, and the antitoxin syringe in the other hand, inject slowly drop by drop, watching for any sudden variation in the pulse, glance occasionally at the child's face, look for a possible change in the expression, and color, etc. If the patient is old enough ask how it feels, one thing will strike you, as significant from the very start of the injection, improvement is immediate in the large majority of cases. With this sudden and perhaps not unexpected impovement setting in, it is a question how much antitoxin to inject. You will note that I don't speak of units, the amount of fluid is what concerns me. The effect of the antitoxin upon the heart as seen through the pulse is the key to its safe administration, any sudden irregularity or rapid lowering in the pulse demands immediate withdrawal of the needle. The pulse in my experience, seems to be the quickest means by which we can recognize any beginning untoward effect. This kind of watchfulness will teach us, how small is the amount of diphtheria antitoxin that affects the organism, it will be appreciated that every drop deserves consideration, the younger and weaker the child, the less antitoxin one should desire to inject. The severity of the illness is not the sole criterion to follow in antitoxin injection, not the disease but the pateint is to be injected, and it is the patient's condition that should be a guide to the safe procedure. If the patient's condition and pulse permit the entire syringe full of about 10 c. c. diphtheria antitoxin may slowly be injected. If this technic is followed it will seldom be necessary to empty the syringe, in ordinary cases met with 2 to 3 c.c. of diphtheria antitoxin will be found sufficient. In laryngael diphtheria the entire 10 c.c. may be administered if possible. There is now on the market a concentrated diphtheria antitoxin; its advantage is in the reduction in bulk, it is used in amount similar to those employed in bacterin therapy. This method takes considerable time, it's advantage lies in its safety to the patient on account of the slowness of administration, there is no elevation of the skin produced, there is no outward sign of an injection having been given, except the needle point mark, and this becomes invisible if tincture iodine was the antiseptic used at the site of puncture. The principle of the method outlined, is manifestly different from the one usually understood. We must consider that if 10 c.c. or more of idphtheria has such a profound effect upon the human organism, it must be because of the combined effect of each drop. To determine what effect each drop has, is a matter of slow and careful administration and observation. The rapid and carefree administration of the older method is fraught with danger. It is in direct contrast to the method here outlined, one never knows what is going to happen, everybody concerned is on edge, the patient is squirming to get loose from the attendants, who dread the sight of the procedure, while, worst of all, the physician wishes he were through before he began. It is the lack of observation that causes serious sickness, anaphylaxis, and even death. Every patient with possibly a few exceptions will show his limit of toleration, it is only by keeping within the bounds of endurance, that the injection can safely be made, and untoward results prevented. One injection of 2 to 3 c.c. usually suffices, in the treatment of one case, but if indicated by severity or return of symptoms, a second and perhaps larger injection may cautiously be used. Subsequent injection of diphtheria antitoxin may be safely administered according to this method. I think the profession has gotten into the habit of making too frequent injections of antitoxin in any one single case. The effect of antitoxin injected subcutaneously is more lasting than is usually considered. The beneficial effect of antitoxin is greatly enhanced if at the same time attention is paid to elimination particularly through the bowels. By cleaning out the alimentary canal we cut off one important source of infection, and at the same time the body is more free to elaborate its own antitoxins. Diphtheria antitoxin in order to be of benefit, must be injected hypodermically; swallowing it will give no such results that follows its subcutaneous use. An injection is not a mere absorption, it is a stimulation, an electrification, it is as if a dynamo were started in action, by the push of an electric button. An injection of diphtheria antitoxin or any other non-toxic fluid, sets up a process in the system, which has the power to change abnormal conditions to normal. Just how this process does its work is a problem for the future to solve. This beneficent tendency may be utilized in immunizing persons exposed to diphtheria. The local treatment, even if antitoxin is used, should not be neglected. I use asepsis and not antisepsis in my method, that is, I believe in the removal of the spetic material, and not its disinfection in situ. That seems to be the trend in medicine now-a-days, since it was found that antiseptics strong enough to cause the germ to become inert, are destructive to healthy tissue, which subsequently becomes a new avenue for the systemic invassion of disease products. Any bland solution if properly used, will wash away the infective material. I use clean water, normal salt solution, lime water diluted and other neutral or alkaline nonirrating solutions. The proper way to apply the local treatment is according to the age of the patient. A child of school age may be allowed to gargle. The patient should gargle at least, every two hours, frequent gargling keeps up with the rapid formation of the toxins. No toxic products should be allowed to accumulate in the throat. Stasis of this infective material, breaks down the barriers of resistance, and invades the system. A child too young to gargle should be sprayed in the throat at least every two hours, a child too young to expectorate may be sprayed, but on account of the great difficulty to spray these children's throats reliance must be placed mainly on frequent water drinking followed by elimination. At times it may be permissible to swab the throat or remove the loose mucous that collects in the throat. Occasionally it is advisable to administer syrup of ipecac in drachm doses, to give relief to the child. In membranous croup ipecac is frequently of value. It is a good practice to spray or use the Birmingham douche in nasal diphtheria, or if only catarrhal rhinitis is present. An ointment or an oil may be used to massage the outside tissue corresponding to the throat. The remedy is in the rubbing or manipulation, the entire body may be massaged with bland oil or with alcohol. Here again it is the massaging that does the good.

544 Springfield Avenue.

SOCIETY TRANSACTIONS

THE NEW YORK ACADEMY OF MEDICINE

Section of Pediatrics

Stated Meeting Held October 17, 1913

DR. HENRY D. CHAPIN, CHAIRMAN

Atypical Infantile Paralysis.—Dr. F. L. Wachenheim read this paper. He stated that one of the striking features of the present epidemic of infantile paralysis, which had prevailed since 1907, was the large proportion of atypical cases. The following course was run by the typical and classical form of the disease. The patient suddenly fell ill with moderately high temperature, more or less gastrointestinal disutrbance, and general weakness of the extremities. In a few days the temperature would abate, leaving the child paralyzed in one or more limbs. This paralysis gradually passed off, except for one group of muscles, in usually one of the lower extremities, which remained atrophied and disabled for life. Infantile paralysis was considered a disease of the anterior cornua, usualy of the lower spinal cord, rarely involving other portions of the gray matter. During the epidemic of last fall Dr. Wachenheim observed seven cases, of which only one was typical; the other six cases were so atypical that he thought them worth reporting in full. Attention was called to a series of cases reported to Dr. Henry Koplik in which symptoms recalling both cerebrospinal and tuberculous meningitis dominated the clinical picture throughout the course of the disease. It seemed that the Fehling test was of doubtful value in severe cases of meningoencephilitis; this seemed to vary, according to the intensity of the infection, rather than the etiology of the disease. A characteristic feature of these cases was the sudden onset. The high leucocyte count seemed to be a constant feature. The cerebrospinal fluid at first was cloudy, but differed from that of cerebrospinal meningitis in that the sediment consisted largely of leucocytes; in a few days the fluid cleared up, leaving only a delicate fibrin on standing. The germ of poliomyelitis, which had recently been found, might turn up in the spinal fluid of this group. The intraspinal pressure was usually not high. The temperature was apt to run the course usually observed in poliomyelitis, possibly rather high at first, but falling to normal before the remission of the grave cerebral symptoms. After all was said the most striking feature was the disproportion between the cerebral symptoms and the general condition of the patient; this was the chief guide in the diagnosis of his case. After the first few days one infant held its own and even gained in weight, in spite of the presence of an apparently serious intracranial condition. This clinical discrepancy was so remarkable that it could not fail to attract the notice of the attending physician, and clear up speedily all remaining doubts as to the type of the disease. The prognosis in this type of the disease was fairly good as to life; unfortunate after effects, as a paralysis of some muscular group, mental impairment, and amaurosis, might remain. The resulting paralysis were apt to be of the flaccid type distinctive of poliomyelitis, not spastic as after ordinary meningitis. The remarkable variations displayed by so small a clinical material was sufficient to convince them that infantile paralysis was one of the most protean affections of the central nervous system.

The Year's Progress in Poliomyelitis Research.—Dr. George Draper had no paper because the subject assigned to him really called for a review of the literature on the subject of poliomyelitis; consequently anything he might say had already been published. However, there were three points worthy of special emphasis. The first was in reference to the visceral pathology of the disease. Poliomyelitis had hitherto been classified as a disease of the nervous system, but now it had been discovered that there were general lesions. The lesions in the liver, similar to those noted in leukemia, were especially of mention. The second point had reference to the epidemiology. In Sweden washings from the rectum of patients suffering from poliomyelitis had been injected into monkeys and the disease reproduced, though it did not follow the typical course pursued in man. It had been found that the virus existed in the nose and mouth of healthy persons who had been thrown in contact with those suffering from the disease. Thus these secretions, long suspected as being the carriers of poliomyelitis, had proved to be such. The third point was the identification of the organism itself. This organism was extremely small, just on the limits of visibility, was anaerobic and cultivated only with the greatest difficulty. It took the Giesma stain best, was variable to the Gram stain, but tended to be Gram positive, varying, however,with the constituents of the media. It fulfilled Koch's laws. The discovery of this organism was not only of moment because of its relation to poliomyelitis, but because it opened up a new field of bacteriology.

Dr. Henry Heiman, of New York, who opened the discussion, said that when one considered that there were at least nine varieties of poliomyeliti, it was not surprising that so many atypical cases were found. Doctor Wachenheim's cases would serve as a nucleus for many other types likely to be observed in the future. Hardly any part of the cerebrospinal system was exempt from attack, and this might account for the many types of the disease. The cerebrospinal and meningeal types were sometimes confounded with meningitis because of the presence of spasticity. After the subsidence of the spastic signs, paralysis appeared and the diagnosis became clear. It was almost impossible to give a definite prognosis in the severe cerebral forms of the disease. Since the germ was anaerobic how was it able to live in the nasal secretions or in the rectum?

Dr. H. L. Amoss, of New York, remarked that Doctor Draper had given a very good description of the organism. It was only with the greatest difficulty that they had succeeded in cultivating it at all according to Noguchi's method. They had tried about twenty-five samples of ascitic fluid before they at last succeeded in cultivating the organism from the nervous tissues of a monkey dead of the disease. The organism had been found once in the spinal fluid of a monkey, but never, to his knowledge, in that of a human being. They had concentrated spinal fluids from several cases of acute poliomyelitis in the human being under diminished pressure at 33° C. and injected it into the brain of monkeys; suggestive symptoms alone resulted. As to the viability of the virus, one of their strains had been kept in sterile glycerin in the icebox for twenty-four months and was still capable of producing the disease when inoculated into the brain of monkeys.

Dr. George Draper, in closing the discussion, said in reply to Dr. Heiman's question that possibly the secretions of the nose and throat formed a capsule enclosing the organism and excluding the air and thus preserved the vitality of the organism.

Dr. F. L. Wachenheim said that the points which he wished to emphasize were the difficulties in diagnosis in meningeal cases, and that in a few days one could usually size up the case as not typical meningitis. The subject of insects as carriers of poliomyelitis had not been discussed and it was to be hoped that it would be brought up later.

Results of the Investigations of Summer Diarrhea at the Boston Floating Hospital, 1910-1913—Dr. Henry I. Bowditch of Boston said that his remarks would be only an accumulation of facts and would illustrate the fact that by intensive work they could accomplish more than by extensive work. The Boston Floating Hospital had accommodations for 120 ward patients and 160 day patients. Children were taken at all ages. There was a post-graduate staff of about 16 internes, 2 bacteriologists and 1 pathologist connected with the hospital. The scientific work was started in 1909, when Dr. Lucas and one of his confreres were working on agglutinins in the blood of dysenteric cases. In 1910 Dr. Arthur I. Kendall made, with the assistance of the staff, an extensive bacterio-clinical study of diarrheas, especially dysenteries. They established a shorter method by twenty-four hours of making the bacteriological diagnosis of the dysenteries produced by the Flexner and Shiga bacilli. They found the gas bacillus in many cases was the predominating organism and then they demonstrated a clinical test for its presence in the stools. This test consisted in taking a tube one-quarter full of milk and inoculating it with mucus from a movement. The whole was boiled over a Bunsen flame for one minute and then kept at blood heat for from six to nine hours. A positive gas bacillus infection peptonized the milk, squeezed out the whey, riddled the curds with gas and produced a strong odor of butyric acid. This same year they shortened the former long period of starvation in dysenteries from three, five or seven days to twenty-four hours. Boiled water was given as temporary stravation. This was followed by barley, lactose and buttermilk, according to the infection. They used for the first time (1910) a solution of dextrose (2½ per cent in normal saline) for stimulation in cases of dysentery of Flexner type with marked loss of water and depletion. The idea underlying the procedure was that the normal amount of circulating dextrose in the system had been partially used up and by supplying the infecting organism with the food it could be prevented from living on the body proteins and producing toxins.

In 1911, they for the first time isolated the Shiga bacillus from the blood. During this summer they made an investigation along the line of rectal irrigations, trying various solutions, most of which seemed to do little good. They now gave saline irrigations immediately on admission and but few during the course of the disease. They used silver nitrate (three per cent.) in instances where the infection was low. Solutions like tannic acid had little effect. They found that pyelitis was rather frequent in their cases, the majority of cases occurring in cases of streptococcus infection.

In 1912, the number of cases infected with the gas bacilli greatly increased, and they carried out their theory of feeding high proteids, giving buttermilk, fat free milk, and Eiweiss milk without any trouble. After the first week they felt safe in giving these without making a bacteriological examination. Almost all the children improved under this treatment and one variety of milk seemed to agree as well as another. They therefore concluded that milks with high protein content were better for gas infections, and they also found that in this kind of infection it was dangerous to give lactose. If one was giving lactose and the symptoms reappeared one should change immediately to a high protein diet.

While the year 1913 was not yet complete the work was interesting as far as it went. They now made more accurate bacteriological examinations than formerly. During this year there was a predominance of the slime baccilus. This bacillus first appeared in August, 1912. The bacterial study of these cases brought out the fact that the predominating bacillus in the month of August in one year would be the predominating one in the following July: this carried out the cyclic phenomenon of epidemic diseases. They had used during July of this year high proteid feeding on account of the presence of the gas bacilli, but in August the Flener bacillus appeared and because of the danger of giving high proteids in such cases they quickly changed to other methods of feeding, giving lactose solutions (from five to seven per cent.) with or without barley starch.

Dr. Rowland G. Freeman, of New York, said that his first experience in pediatrics having been in the autopsy room, he had become accustomed to an anatomical classification. Clinically, cases were readily classified in this way. The lesion was in most cases an ileocolitis, only the lower twelve inches of the ileum and each end of the colon being infected, the transverse colon being distended with gas. These cases might be acute or chronic. There might be simply a congestion on an enlargement of the follicles, or an erosion giving rise to blood in classification, but so far their information had been insufficient for this. For some years he had been interested in the isolation of the Flexner bacillus and in studying the results of the bacteriological examinations in two large services he had felt convinced that Flexner bacillus was simply a terminal infection and had no significance as regarded prognosis or treatment. At the time, however, they were not looking for the Flexner bacillus as a predominating organism.

Dr. Godfrey R. Pisek, of New York, said that the practical point in this work was the opportunity to study a large number of cases over a long period of time. The results of this work had given them practical information. The southerner who came to their schools often asked more questions on the bacteriology of diarrheal diseases than any other, and this was because he had larger opportunities for observing that therapeutical measures that gave good results in some cases did not do so in others. The Boston men were on the right track in saying that certain bacilli were predominant in some localities and not in others. Doctor Bowditch had told them nothing of their mortality in Boston; in New York they were justly proud of their statistics of infant mortality. Doctor Pisek cited some of the figures showing what had been accomplished by various agencies in New York in the reduction of infant mortality. For instance, the mortality of children under one year of age for the year 1906 was 153.7 to each 1,000 births, while in 1912 it was 105.3. The death rate for the three months of 1913 for infants under one year of age showed an actual decrease from 1908 to 28.2 per cent; from 1909 of 20.1 per cent; from 1910 of 26.1 per cent; from 1911 of 10.3 per cent; and from 1912 of 5.7 per cent. For July, August and September of 1912 the total number of deaths of infants under one year of age was 4.381 and for 1913 it was 4,119. The number of deaths from diarrheal diseases of children under one year of age was 1,921 for 1912, while for 1913 it was 1,638. In 1912 the infant deaths were 43.8 per cent. of all deaths, and in 1913 they were 39.7 per cent. of all deaths.

Dr. L. E. La Fetra, of New York, stated that last year he had had the privilege of making two visits to the Floating Hospital and wished to express his admiration of the work done there. All the cases were most thoroughly studied and the staff conference which he had attended was most interesting. From what had been said of the different results of using Eiweiss milk on the cases of gas bacilli and on those with the Flexner bacilli, it would seem that a knowledge of the predominating bacteria would be of distinct advantage. Occasionally they got a case that did not clear up with the Eiwiss milk, and a bacteriological examination would certainly be a help. It would be interesting to know if Doctor Bowditch had discovered any characteristic feature of the stools, as odor or reaction, that would indicate the kind of infection present.

Registration of Infants Dying Under One Year of Age Recommended in New York.—At the first meeting of the Advisory Board recently appointed by the Health Commissioner Lederle of New York City to prepare recommendations for the improvement of vital statistics in that city, one of the members of which board is Dr. Cressy L. Wilbur, chief statistician for Vital Statistics of the Bureau of the Census, a recommendation was adopted unanimously to the effect that the most important improvement which could be made in the vital statistics of New York City consists of the verification of the birth registration of every infant dying under one year of age, in order to detect omissions, and strict enforcement of the law providing a penalty for an omission to record a birth in every case thus brought to light.

New York is one of the few large cities of the United States having even an approximately complete registration of births, and this action is likely to result in complete registration and so bring its birth statistics up to the standard found in other countries. The Census Bureau is greatly interested in this movement because, as shown in the series of charts prepared for the American Association for Study and Prevention of Infant Mortality held at Baltimore recently, one of the greatest defects of American vital statistics is the entire lack of reliable rates of infant mortality due to defective birth registration.

Essentials of Modern Artificial Feeding of Infants. (Medical Record)—Dr. Robert A. Strong, of New Orleans said milk sugar, maltose or malt sugar, and saccharose or the commonly used sugars in infant feeding were lactose or cane sugar. Malt sugar, on account of being very expensive, was used in combination with dextrin. Maltose was more rapidly converted and absorbed, hence was less liable to cause fermentation. Maltose was opinion was not unanimous on the use of any particular sugar. In Germany malt sugar preparations were used almost exclusively in milk modification. The present status of starches was about the same as it had been for the past five years. The additions of cereals was still desirable, but not before the fourth or fifth month. The routine use of lime water continued with many, while others contended that its use was unnecessary in normal infants. He had adhered to the routine practice of using it with the belief that the excess of alkali might meet the demand of the infant organism in an impending and obscure acidosis, and besides, its use had never been demonstrated to be harmful. He had used albumin milk in cases of decomposition in his services at the Charity Hospital, and the results had been sufficient to warrant his belief in its efficiency as a temporary measure. As to the methods of feeding, he had been using whole milk mixtures almost exclusively for the past four years, and had been teaching it for the past three years, and he was firmly convinced that it was the logical procedure in the average case.

Report of the Milk Commission (Medical Record).—Dr. Rowland G. Freeman said that the work of the Milk Commission had progressed successfully during the past year. The Commission had certified to the production of 11,842 quarts of milk produced on twenty-two farms, of which that from seventeen farms was bottled milk produced throughout the year, that from one farm was simply a summer supply while the milk on four farms was sold in cans only. In addition, 2,580 quarts of inspected milk were produced on six farms; on two of these farms it was bottled and was produced throughout the year, on two farms it was produced only during the summer, while two produced milk for sale in cans. Their inspector, who had been doing this work for a number of years, had made 229 visits to the farms and had spent 118 days in work at the laboratoy. She had supervised the tuberculin test of twenty-four herds and the physical examination of four herds. The Commission had charged for certification $7243.05, and for the tuberculin tests $2265. This income, which went into the Society Treasury, had exceeded the expenses of the Commission.

At the present time certified milk was sold in New York by the Sheffield Farms Slawson-Decker Company, Locust Farms Company, Clover Farms Company, Borden's Condensed Milk Company, and the Mutual Milk and Cream Company. The Borden Company, which began to produce certified milk somewhat more than a year ago, now had five farms certified. The new farms admitted for certification this year were in general superior in equipment to many of the older ones, and the results of the tuberculin tests were in some respects much more encouraging. In twenty-three tests there were 2,078 cows tested; of these, 1,428 were retests; of these retests only 2.73 per cent. reacted; of new cows bought on test, 4.66 per cent. reacted; while of the new cows presumably not tested 11.94 per cent reacted. Of the new herds seeking certification one of sixty-five cows showed only one reaction, while another herd of sixty-five cows showed forty-three reactors. The owner of this herd disposed of the forty-three cows and had acquired a new herd that was free from evidences of tuberculosis. In this case a cow with general tuberculosis had been allowed in the herd because a veterinarian had advised against the test and on physical examination had not found any tuberculosis present. Of the herds retested since October 1, two showed no reactors either on old cows or in the ones recently bought. The Milk Commissioners urged upon the members of this Society an increased interest in certified milk. If the members of the County Medical Society appreciated the safety of this milk and the comparative danger of the ordinary supply and would express their conviction to the patients with whom they come in contact, many times more certified milk would be sold in New York. It was only by the interest of the medical profession that such a movement as this could thrive or exist.

RETROSPECT OF CURRENT PEDIATRIC LITERATURE

Diseases of the Alimentary System.

Under the Charge of

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Treatment of Enteritis in Infants.—W. M. Salter, in the Southern Medical Journal for January, 1913, states that where this condition is secondary to gastric irritation, the alimentary tract should be thoroughly cleansed. Castor oil acts well if there is no vomiting; otherwise, calomel, rhubarb, and soda should be used. If vomiting is frequent and accompanied by retching, the author usually resorts to stomach washing with some alkaline solution. This is just as necessary as thorough irrigation of the lower bowels.

A twenty-four to thirty-six hour rest, only a little boiled water being allowed, is then required. In the breast fed child, it is usually safe to begin nursing on the third day, but care must be taken never to permit the child to have the full allowance of breast milk at first. The child should be given barley water or five per cent. milk sugar water before each nursing, to dilute the breast milk. This dilution should be continued throughout the excessively hot weather. In the bottle fed infant, if microscopical examination of the stools shows the proteids to be at fault, a course of barley water, whey, peptonized milk and modified raw milk may appropriately follow the period of restriction to boiled water.

In the later stages, reduction of sugars and fats, increase of casein; and the addition of lactic acid bacteria are the measures of treatment generally suitable. The different foods used are: (1) Plain buttermilk; (2) artificial buttermilk made from the two strains of lactic acid bacilli; (3) buttermilk cooked with flour and sugar; (4) casein milk. At first the child may not like fresh buttermilk, and it may cause vomiting; but if it is persisted in, good results will appear in a few days. Buttermilk with flour and sugar is often used; one quart of buttermilk is cooked for twenty minutes, suitably diluted with barley water, and cane sugar added to make up the required caloric value. The value of this preparation seems to lie in the low percentage of fat and the presence of a different proteid, as well as of the lactic acid. Casein milk, advised by Finkelstein, is made by heating a quart of milk to 100 degrees F., adding half an ounce of essence of pepsin, stirring well, allowing to stand at the same temperature one half hour, then filtering. The curd is forced through a fine sieve several times, and finally, one pint each of water and buttermilk added. This food has given gratifying results in all grades of intestinal disturbance. It may be given for some time until the stools are normal and a gain in weight has begun, when return should be made to the regular milk mixture.

Duodenal Ulcer in Children.—Bichat and Imfeld have reported a successful operative case of duodenal ulcer in a girl of 14 and a boy of 15, and Cheinisse states that duodenal ulcers have been found at necropsy of very young children, even infants. Helmholz and Schmidt have reported finding evidences of healed ulcers at necropsy of children who had died from other causes. In Schmidt's case the child was only five weeks old. In Bichat's case an interval of twenty-four hours had elapsed between the perforation of the duodenal ulcer and the operation and yet the child recovered.—Journal of the American Medical Association, October 4, 1913.

Development of Artificially Fed Infants.—Phillipson gives the weight curves of twenty-three infants fed artificially for periods of more than two weeks during 1912. With the exception of two who have died, all the children made satisfactory gains in weight and none suffered from severe rickets. As compared with breast-fed infants, however, the curves do not show as great gains. They were fed on a simple dilution of sweetened cow's milk. In some cases beet sugar was used and in others Soxhlet's sugar with no appreciable difference in results. Phillipson prefers this simple nourishment to albumin-milk, malt, buttermilk, or any of the more complicated formulas frequently used.—Monatschrift fur Kinderheilkunde, Berlin, August, XII, No. 4.

Influence of Summer Heat on Infant Mortality.—H. Rietschel (Jahrbuch fur Kinderheilkunde, Berlin, September, Vol. LXXVIII), maintains that, aside from its indirect effect in spoiling the milk, the high temperature in summer has a direct effect on the child's health. This may be acute, manifesting itself in coma, cramps, fever, diarrhea and vomiting, or it may be chronic, lowering the child's resistance and bringing about various changes in the organism, such as reducing the fermentative processes in the intestine, affecting the intestinal flora, changing the water content by increased perspiration and thus increasing the danger of skin and other infections. There is likewise danger in overfeeding on account of the child's increased thirst. Clinically we get all kinds of pictures, from acute intoxications to chronic summer diarrhea with or without infection. To be sure, poverty, lack of fresh air, sunlight and proper care are factors in the production of these diseases, but all these causes exist in the winter also, and the excess of the summer over the winter mortality is to be attributed solely to the effect of heat which aggravates all the other disease-producing agents.

Vulvovaginitis in Young Children.—N. Barnett (Archives of Pediatrics, New York, September 1, Vol. XXX) reviews a series of twenty-six cases in which the following complications were present: Arthritis of the shoulder, 1; arthritis of the wrist, 1; chronic general peritonitis, 1; pelvic peritonitis, 2, and painful heel, 1. The patient in the latter case was 11 years old and a roentgenogram showed a periosteal exostosis. Burning sensation on urination occurred in 30 per cent. of the cases. The irrigating solutions Barnett has used were potassium permanganate, 1-1,000; bichloride of mercury, 1-4,000; Lugol's solution of iodin, 1-500. For instillations 1 or 2 grams of nitrate of silver one-fourth per cent. and argyrol 10 per cent., were injected through a small catheter and retained three to five minutes. A cotton applicator saturated with nitrate of silver, 10 per cent., was also used to swab the vaginal wall.

Fourteen girls were treated with vaccines at intervals of three to seven days in doses of from five to one hundred millions. The injections were generally made in the buttocks. Each of the above methods received a most painstaking trial, and Barnett has finally adopted the following mode of treatment: The mother is instructed at the clinic in the method of giving the vaginal douche and in preparing the permanganate solution, 1-10,000 or thereabouts. This injection is to be given in the homes daily. Thepatient is put on small daily doses of hexamethylenamin. In the clinic the patient is treated with the electric endoscope. The child is placed on the bed-pan in the dorsal position, the foot of the table being raised to an angle of 30 degrees.

As to the complications, both cases of arthritis showed rapid improvement with complete cure of the arthritis following the use of vaccines, but the vaginal discharge did not diminish in either case, and the vaccine treatment was therefore suspended in both cases. In both cases of pelvic peritonitis treatment was suspended for an indefinite period. No vaccines were given in these cases. The painful heel was improved by the vaccine treatment, but at times there was a recurrence of severe pain at varying intervals. Of the twenty-six cases studied only seven were cured at the end of six months by irrigation alone. Seven of these cases after irrigation had failed have been treated with the endoscope, and five of these were cured in one month. Five additional cases of the twenty-six which had failed to improve on irrigation are now being treated with the endoscope and are rapidly improving.—Jl. A. M. A., October 25, 1913.

The Protection of Children.—The question of child welfare has become of world-wide interest and it is a pleasure to notice that our friends on the other side are awakening to the fact that it is of importance to better their condition. The British Medical Journal of August 9 has the following report of work done in Australia:

The annual report of the State Children Relief Board for the year ended April, 1912, which has just been published, gives a good account of the valuable work done in New South Wales for the protection of children. This Board administers three Acts of Parliament: (a) The State Children Relief Act; (b) The Infant Protection Act; (c) The Neglected Children and Juvenile Offenders Act.

The State Children Relief Act provides for the boarding out of dependent children with approved guardians or with their own mothers, when the latter are deserving widows or deserted wives with children under 12 or 13 years of age, and are not in a position to provide for them independently. The proportion of children boarded out to the population is 5.3 per 1,000; the proportion of children boarded out apart from their parents is 2.7 per 1,000; the proportion of children boarded out with their own mothers is 2.43 per 1,000. The inspection of these children is carried out by a staff of thirty-three departmental inspectors, to each of whom is assigned a defined area of inspection in the metropolitan and suburban districts. There are also three lady inspectors specially charged with the supervision of the condition of infant life, and who visit and inspect infants placed out apart from their mothers in the city and suburban areas. The Board permits not more than three children to be placed with any one guardian, except in the case of families of children, brothers and sisters, under ordinary circumstances, being placed in the same home. An effort is made to obtain individual attention for each child, the adult assistance available in a home being one of the considerations which influence the Board's officers in determining where children shall be placed.

Some thirty years ago the cottage home system for the treatment of afflicted State children was introduced into New South Wales. Some sixteen to twenty invalid or crippled children are placed in each home under the care of a "mother-in-charge." Children who are physically able to do work are given suitable occupation. Girls are engaged in tailoring, laundry work, cooking, and general household duties. Boys are given farming, gardening, or other work. The age of the children varies from 12 to 18 years. The physical and mental infirmities with which they are afflicted render them regular inmates of the home perhaps for years. Cripples, cases of partial paralysis, chronic ophthalmia, uncontrollable temper as the result of their afflictions are met with in these homes. As such are for the most part incurable, all that can be done by kindly and judicious discipline is done for them, and when the time comes for them to leave the homes there are only a few of them who cannot make some attempt to provide independently for themselves. There are in all thirteen cottage homes, eight of which are used for invalid or crippled children, while five form the farm home for boys. These are all in the country, and in addition to chronic cases of ill-health, children temporarily indisposed, and needing change of air are treated. This treatment has proved very beneficial, particularly in the case of children who have come under the control of the Board from the slum districts of the metropolis. The improvement in the physical condition of such children is remarkable in a very short time. In two of these homes provision is made for such of the Board's wards as are mentally deficient, yet not sufficiently so to warrant their commitment to a hospital for the insane. The cottage home for feeble-minded children at Parramatta was opened in 1908 with 10 children. The cottage is in the charge of an experienced matron, and a specially trained teacher, certificated in Kindergarten principles, has been appointed to instruct the children according to their capacities. The children show themselves remarkably susceptible to music and singing. The results so far have been satisfactory. Since the home was opened 50 children have been admitted for treatment and 35 discharged.

Diseases of the Respiratory System

Under Charge of

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Rest in Tuberculosis.—J. W. Flinn, Prescott, Ariz., (Journal A. M. A.), says that, in spite of the work of Hilton, Mitchell, etc., physicians have been rather slow to appreciate what rest can do to cure and prevent disease. With the exception of a little work of Norman Bridge and a few scattered papers by others, practically nothing has been written on the important subject of rest in tuberculosis. Though Bridge was unfortunately content with mechanical measures, his views were a decidedly marked step in advance, and the revival of the operation of artificial pneumo-thorax, though its special value is only in a limited field, may help to teach the profession the importance of rest to the lung. Flinn would prescribe it for every tuberculous case; absolute rest in bed for at least a month, and in most cases for two months, whether there is fever or not. It should be prescribed in definite quantities guided by the condition of the patient throughout the disease, and when a certain grade of rest does not bring the maximum temperature below 100 F. in two weeks, the next higher grade should be tried. To the objection that each case should be treated individually, he answers that the power to individualize comes only with experience and that the inexperienced should follow general rules and make exceptions only when benefit is not derived. Rest in bed is also a valuable remedy after the lung lesions have become quiescent and the patient is taking active exercise. Two hours absolut rest in bed should be given each patient each afternoon until he returns to his former work. After that, one hour's rest after the noon day meal should be spent on his back and Sundays should be spent in bed for some months. In many cases a day's rest in the middle of the week is necessary to enable him to attend properly to his work the remaining five days. In spite of all that has been done with other special treatments, the profession should never forget the fact that fresh air, good food and rest are still essentials in the management of pulmonary tuberculosis.

Tuberculosis of the Larynx in Children.—Edouard (Thesis de Lyon) says that laryngeal tuberculosis is relatively rare in children. Its frequency in tuberculosis children ranges from 2 or 4 per cent. according to the clical symptoms only to 13 per cent. as ascertained by post-mortem examination. A primary form is most exceptional. The condition is chiefly found in miliary tuberculosis and in advanced pulmonary and generalized tuberculosis. Its pathology varies. In miliary tuberculosis infection occurs by the blood stream, while in some of the case where the pharynx is simultaneously involved the lymphatics convey the infection. Inoculation by the sputum may take place in children as in adults. The earliest symptoms is usually dysphonia, and is followed by laryngeal pain. dysphagia, and an intermittent, dry, hoarse cough. Dyspnoea, however, which may be of sudden onset, is the predominant symptom, and is more marked than in the adult, partly from the narrowness of the larynx and partly from the frequency of spasmodic phenomena in children. The clinical forms are the granular (the most frequent), the infiltrating and ulcerative, the ulcero-oedematous, the pharyngo-laryngeal, the vegetative, tuberculous tumor of the larynx, the subglotic and the perichondritic. Diagnosis must be made in a few rare cases of sudden onset from diptheria and suffocative laryngitis, in the vegetative forms from papilloma, and in other cases from congenital syphilis of the larynx and compression by lymphatic glands. The prognosis is very grave. The course is always rapid and rarely exceeds eighteen months. Death frequently occurrs in a few months or even weeks. In Nobecourt and Tixier's case the duration was only four days. The treatment is that of pulmonary tuberculosis. Owing to the difficulty of local applications and the frequency of asphyxial attacks tracheotomy is often indicated. The thesis contains the histories of eleven cases, four of which are original, in children, five males, six femanel, aged from 1 1-2 months to 14 years.—British Journal of Children's Diseases.

Orthopedic Surgery

Under the Charge of

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The Operative Treatment of Hallux Valgus and Bunion.—By Jno. D. Singley. Jour. A. M. A., Nov. 22, 1913. The author employs a modified Fowler's operation for this condition. The incision is made between the great toe and the second toe and is carried close to the metatarsal bone. The external lateral ligament is cut and the great toe is dislocated and reversed so that the metatarsal and the phalax lie parallel and side by side. As much of the two joint surfaces as is necessary is then removed by a saw. A fatty flap is at the point of section of the metatarsal bone. It it then sewed over the head of the metatarsal. The long extensor tendon of the great toe is cut and the toe is brought back into normal position. The joint capsule is carefully stitched in position, and the incision is closed with silk worm gut and iodine gut. Drainage is secured by a few strands of gut. A wet dressing of Lugol's solution is applied to the wound, and the toe is protected from the pressure of the bedclothes.

Arthritis deformans of the Spine differs in no essential features from the same disease of other joints. The pathology is marked by ankylosis of the spine and by new bone formation which may encroach upon the spinal canal and upon the spinal nerves. Pain, stiffness, disability and deformity mark the disease here as elsewhere. In its diagnosis it must be differentiated from Pott's disease. The treatment consists in the removal of the source of the infection, if possible, and in rest and protection of the spine by a brace.

Charcot's joint is still of undetermined etiology, according to the author, although he inclines to regard the disease as one of the lymphoid marrow and synovia due to the late syphilitic toxins. The bone ends are eaten away in large "bites," and the joint cavity is filled with fluid. Finally the entire joint becomes pretty completely disorganized. The characteristic symptoms are the sudden swelling of the joint, the gradual disorganization of the joint structures, and the absence of pain, which is striking in contrast to the severe anatomical changes that are taking place. It should be treated by supporting it with a brace. Operative procedures are not indicated.

Ankylosis may be true or false. In the former the stiffening occurs in the joint structures; in the latter, in the structures outside the joint. False ankylosis is better called contracture . The true form may be bony or fibrous. The surgeon in dealing with a case of ankylosis should first determine the cause of the condition and then the nature of the ankylosis. No attempt should be made to mobilize a joint that is the seat of active disease. If the ankylosis is due to tuberculosis it is impossible to know whether or not the disease is fully cured, and an arthroplasty is a dangerous proceeding. In fibrous ankylosis, baking, massage, etc., may be all that is necessary to effect a cure. In bony ankylosis either an osteotomy or an arthroplasty should be considered.

Orthopedic Treatment of Spinal Poliomyelitis.—By Watkins. Cal. State Jour. of Med., Sept. and Oct., 1913. Orthopedic surgery is valuable in all three stages of poliomylitis, the acute stage, the stage of recovery, and the end stage of permanent paralysis.

In the acute stage the spine should be immobilized, preferably a plaster jacket. This procedure relieves the pain which many patients suffer, and it probably hinders the spread of the inflammation in the spinal cord.

During the second stage the paralyzed limbs should be kept in such a position that there be no strain placed upon the ligaments nor tension upon weak or paralyzed muscles, and that there be no tendency to development of contractures. Active treatment should be begun lightly about two months after the onset of the disease and be gradually increased. Muscle regeneration may continue for even two years after occurrence of paralysis.

Electricity, especially the slowly interrupted galvanic current, is probably useful in maintaining the tone of temporarily paralyzed muscles. Skillful massage aids the nutrition of the muscles but rough manipulations of the soft and delicate muscles may permanently injure them. Active exercise and training of the muscles is by far the most valuable measure that can be employed. The success of the exercise treatment will depend, however, in large measure, upon the intelligence and patience of the person in charge of the child, usually its mother, upon whom rests the responsibility of securing the co-operation of the child in developing the muscles. The author discusses in some detail this most important exercise treatment; its forms, its methods, its technic, its theory, and its results.

Braces are employed to prevent deformity and to improve function. After operations they may be used to protect the part operated upon against strain until it becomes firm or strong enough to stand unassisted. Braces should not be used if they will permanently injure the limb by causing atrophy of muscles, even if they produce some temporary improvement. They are to be prescribed only by the surgeon who is thoroughly competent to do so, and they should never be left to the judgment of the instrument maker.

In the third stage, that of final and permanent paralysis, operative measures are to be considered in order to improve the function of the limb. Nerve anastomosis is an ideal procedure theoretically, but practically it has not been very successful and cannot at this time be given precedence even in selected cases.

Tendon grafting has been employed for thirty years and has a limited field of usefulness. By this operation the tendon of a good muscle is attached to the tendon of a paralyzed muscle.

Lange's tendon transference is superior to tendon grafting. In Lange's operation a good muscle is detached from its insertion and transplanted to the periosteum of the bone at the point necessary to take the place of the paralyzed muscle. By this means muscular balance is restored to the limb, whereby stability is given and deformity is overcome. The operation should be followed by education of the muscle in its new position to do the work required of it. In the transference of healthy muscles it frequently occurs that the tendon of the muscle is not long enough to reach the point where it is desired to insert it. Silk tendons should then be employed to connect the muscle tendon to the point of its bony insertion. This silk is prepared by boiling it in mercuric chloride solution and then in paraffin. The transferred tendon or the silk tendon should tunnel the subcutaneous fat in order that no firm adhesion may impair the action of the tendon. All the details of this operation together with the important after-treatment are satisfactorily discussed by Watkins.

Arthodesis is employed to make a frail limb stable when there are insufficient healthy muscles to accomplish this end. The implantation of silk check-ligaments is to be preferred in children under ten years and in other selected cases.

This paper by Watkins is a very clear and satisfactory presentation of the subject of the treatment of anterior poliomyelitis and its results.

Acute Poliomyelitis in California.—By Gundrum. Cal. State Jour. of Med., May, 1913. The author has collected and analyzed the reports of cases of poliomyelitis occurring in California during the last three years. The total number of cases was 706. The mortality was 21 per cent. The disease is more prevalent in summer, as 72 per cent. of the cases occurred between the first of May and the first of October; but there were cases occurring during all seasons of the year. Seventy-two per cent. of the cases were children under eight years of age. Exposure to the contagion could be demonstrated in only 10 per cent. of the cases. The onset was of the meningeal form in 30 per cent., and gastro-intestinal in 47 per cent. The spreading of the virus in a community could not be traced in the majority of cases. Possibly the unsuspected carriers were insect or animal, possibly human.

Infectious Diseases.

Under the Charge of

ST. GEO. T. GRINNAN, M. D.

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Causes of Continued Fever in Children.—J. Phillios (Cleveland Medical Journal, September, Vol. XII) classifies the most common causes of continued fever in children, as follows: 1. General infectious diseases such as typhoid, malaria, tuberculosis, influenza, septicemia syphilis. 2. Infections of the nose with its accessory sinuses, the ear and tonsils. This would include nasopharyngitis, infections of the antrum of Highmore, the ethmoidal and sphenoidal and frontal sinuses, otitis media with or without mastoiditis, and chronic tonsilitis. 3. Oral infections, particularly pyorrhea alveolaris. 4. Glandular inflammations, such as cervical adenitis or inflammatory conditions of the mediastinum and retro-peritoneal glands, tuberculosis peritonitis. 5. Diseases of the lungs and pleura, especially empyema bronchiectasis and abcess of the lung. 6. Chronic endocarditis and pericarditis with effusion. 7. Chronic appendicitis, constipation, colitis, starvation. 8. Infections of the urinary tract and vagina, pyelitis, nephritis, cystitis, gonorrheal vaginitis. 9. Diseases of the bones and joints. 10. Anemic conditions—pernicious anemia, Hodgkin's disease, leukemia, infantile scurvy. 11. Heat congestion due to insufficient radiation as seen in premature infants. 12. Chronic diseases of the brain and meninges—brain abcess, meningitis.

Prophylaxis of Diphtheria.—Delyannis (Wiener Klinische Wocenschrift, Vienna, August 28, No. 35) enlarges on the necessity for searching out and isolating the carriers of diphtheria bacilli as the only means to stamp out epidemics. He gives a number of concrete examples to show the small numbers of diphtheria-bacilli carriers and the comparatively short periods during which they require isolation. This renders prophylaxis along these lines comparatively simple and easy. He cites Wolff's experience with endemic diphtheria in two villages, affecting 20 per cent. of the total population and resisting all attempts to stamp out the disease until the bacilli carriers were sought out and isolated when at one stroke the epidemic was conquered and no further cases developed, although all other prophylactic measures were dropped. Delyannis thinks that the same system of prophylaxis should be enforced for diphtheria ar for typhoid.

Iodin in Prophylaxis of Diphtheria.—Strauch (Therapie der Gegenwart, Berlin, September, Vol. LIV, No. 9) applies as a routine treatment tincture of iodin to paint the tonsils when diphtheria bacilli are still found in the throat a week after the close of an attack of diphtheria. In sixteen out of fifty cases after one or two applications of the iodin on a cotton pledget no further diphtheria bacilli could be detected; in twenty others none could be found after three applications; in two cases four applications were necessary, and in four other cases, including three with diphtheria of both nose and throat, the bacilli could still be cultivated from the tonsils. He commends this systematic iodin treatment as a useful means of controlling the further spread of the infection, even though it is not invariably successful. The most striking results were observed in some cases in which chronic bacilli carrier were freed from the bacilli in a few days under the iodin. No harm or by-effects were ever noticed, except the disagreeable but transient taste of the iodin in the mouth.—Jl.A.M.A.

Infant Mortality.—In the British Medical Journal of August 9, 1913, there appears the report of the Congress on Infant Mortality, held in Canton Hall, Westminster. The conclusions of the conference were as follows:

1. That this Conference urges that the maternity benefit be made the property of the mother both in practice and in law.

2. That in view of the damage liable to be wrought to growing girls by judicious stress of education, especially during puberty and adolescence, this Conference feels bound to deprecate any form of education for girls which pays insufficient attention to establishing good bodily health and complete fitness for maternity and the practical care of a home.

4. That this Conference urges upon the Government the necessity—in the interests of both mother and child—of legislating for the registration of stillbirths.

4. That this conference urges upon the Government the necessity for the more complete medical certification of death, and that the medical death certificates should be forwarded to the registrars, as confidential documents, under sealed cover.

5. That the time has arrived for steps to be taken with a view to securing the better training of women who apply for the certificate of the Central Midwives Board.

6. That this Conference requests the Executive Committee to communicate with the General Medical Council and the degree and license conferring bodies with a view to infant hygiene being given a more important place in the medical curriculum.

7. In view of the large percentage of stillbirths and infant deaths directly attributable to venereal diseases, and considering that infant blindness and other congenital defects are in many cases due to the same cause, the English-speaking Conference on Infant Mortality urges the respective Governments of the countries therein represented each to appoint a commission to inquire into the prevalence, the causes, the provision of treatment, and the possibility of the prevention of these diseases.

8. That the attention of the Board of Education be drawn to the extreme desirability of making the grant earned by "recognized" infant welfare centres depend in future on their efficiency, on the number of registered attendances of the mothers at consultations, classes and talks, and on the number of home visits paid under adequate supervision.

9. That this Conference calls on the Government to give explicit powers of making grants for infant consultations and schools for mothers.

10. That the Executive Committee be instructed to take whatever steps they may think desirable in order to ensure a microscopical examination of milk, to be supported by analytical methods.

Surgical Diseases of Childhood.

Under the Charge of

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Surgical Scarlet Fever.—H. Hahn, in the Monatschrift fur Kinderheilkunde, Berlin, August, XII, No. 4, outlines the histories of seventeen cases of scarlet fever which he encountered in his surgical clinic following wounds or operations. The larger number of them occurred after burns or operations for empyema. Suppuration around the wound occurred and the typical picture of scarlet fever then developed, but the attack was milder than ordinary scarlet fever. In one case only was there any ear affection or swelling of the lymph nodes. In no case was there nephritis or heart affection. This is attributed to the fact that infection was with an attenuated virus.

Appendicitis in Children.—In view of the frequency—the increasing frequency and severity—of appendicitis in children, Smpson says, we should lose no opportunity of impressing on the public the possible severity of abdominal pain in a child. And he urges on the profession the advisability of early operation. Temporizing, waiting for an interval, or for more definite signs to develop, may be attended by most serious consequences. Early operation is the treatment of appendicitis in adults; it is even more important in children, in whom fewer cases remain localized to the appendix itself, in whom there is less tendency for adhesions to form, less chance of a localized abscess, and the disease runs a more rapid and severe course. In all stages of acute appendicitis in children operation should follow immediately on diagnosis; the signs and symptoms may be slight, with very serious conditions in the abdomen, and only surgeons with a very wide experience may, in rare cases, be justified in waiting for convalescence before performing their operation.—British Journal of Children's Diseases, London, September, XX, No. 117.

Operation for Intussusception Complicated by Measles and Bronchopneumonia.—By S. T. Irwin, M.Ch.Belf., F.R.C.S.Edin. About 2 a. m. on February 22nd, 1913, I was asked by Dr. Robert Boyd to operate on an infant which he had just seen.

The patient was a bottle-fed male infant, aged 3 months, previously healthy, living in a small kitchen house in the east end of Belfast. At 3 p. m. on the previous day the child appeared suddenly in pain, vomited, and passed a normal motion. Some time later a little blood-stained mucus came away by the rectum. When Dr. Boyd saw the child just before midnight he found it breathing 40 to the minute, the temperature 101.2 degrees F., the pulse 120, an intermittent cough, and a profuse eruption indicative of measles covering the body. On examination of the chest numerous patches of bronchopneumonia were detected on both sides, but especially on the right. An elongated tumour, easily palpable, lay on the left side of the abdomen opposite the umbilicus. The rash had appeared the previous morning.

The diagnosis was obvious, and the normal course for a purely surgical affection would have been to send the child to the Ulster Hospital. This, however, was precluded by the infective fever; the pneumonia added additional risk to any exposure to night air in view of a general anaesthetic. On the other hand, without operation, death must follow. Therefore, though the surroundings were anything but promising, either for the operation itself or for the subsequent nursing, it was decided to operate in the house.

Operation.

About an hour later he opened the abdomen, Dr. Boyd administering chloroform. He had taken the precaution to bring all his instruments ready sterilized, in addition to the usual dressings, towels, etc. Disinfection of the skin was carried out by washing with soap and water, spirit and drying with ether. Tincture of iodine (B. P.) was then twice painted over front of the abdomen. Rubber gloves were worn. The incision was through the right rectus. An ileo-caecal intussusception of large size was found. Reduction was fairly easy, but the last portion could only be extruded after withdrawal of the tumor outside the abdominal wound. The appendix was removed for two reasons: (1) It was very much swollen, even for such a case, where some swelling is characteristic, and it was kinked in two places at an acute angle; and (2) it was the last part to be reduced, therefore probably the first to enter, and therefore may have had something to do with the causation of the invagination. The abdomen was closed in layers. Van Horn No. 2 thirty-day catgut was used for the buried and silk worm gut for the musculo-cutaneous and cutaneous sutures. The child was back in bed in forty-five minutes, and did not seem to have suffered much from the surgical intervention. Ten minims of compound tincture of camphor were given after recovery from the anaesthetic.

After History.

For three days the temperature remained at 101 degrees F., and there was distressing cough which threatened to tear the wound open, more especially as some suppuration as the result of the rash might have been expected. Neither of these untoward results occurred and the further progress of the case was uneventful. The nursing from first to last was carried out by the mother, and when the silkworm stitches were removed on the eighth day healing was perfect.

The case illustrates one or two important points—namely: (1) That measles, even with a profuse rash at the operation site, need not deter the surgeon from an otherwise urgent or desirable operation; (2) the value of iodine as an efficient and convenient method of skin disinfection; (3) that successful nursing of cases as serious as abdominal section can be carried out in mean surroundings and without the aid of specially acquired skill—a point lately emphasized by Mr. Andrew Fullerton and others in connexion with operations in the outpatient departments of general and more especially children's hospitals.—British Medical Jl., Sept. 20, 1913.

Pyloric Stenosis in Infancy: An Analysis of Twenty Cases Personally Operated Upon.—Dr. H. M. Ritcher of Chicago reported twenty cases. Of these eighteen were of the type described as hypertrophic pyloric stenosis; two were of the type known as spasmodic. In all of the eighteen a definite, firm olive-shaped tumor was demonstrated at operation; in seventeen of the eighteen it was palpated and recognized through the abdominal wall before the operation. In one case in which it was not palpable before the operation, the clinical findings were so clear that the diagnosis was made without reserve. The tumor consisted of a firm, olive-shaped body, roughly one-half to three-quarters of an inch in length. It was covered by a smooth, glistening peritoneum that had the appearance of being stretched over the mass. There was no external evidence of inflammatory reaction; no attempt at fixation. The mass was as freely movable as a mass at the pylorus so commonly was when found in the adult, and this mobility was recognized clinically and was probably the cause of the frequency with which clinicians had failed to demonstrate it. The tumor had the firmness of cartilage; it was not soft or pliable in any case; there was no case in which its consistency made the finding questionable;

no case in which a graduation could be made out between the tumor mass and the adjacent stomach and duodenum; it was sharply defined. In two cases in which a pyloroplasty was done, and in one case that came to autopsy, a section of the pylorus showed the mucosa to be relatively redundant, so that it bulged out of the incision when relieved of the compression by the tumor. The histological picture had been perfectly worked out by others; in one case of his series that came to autopsy the finding agrees with the universal report, viz.: a simple hyperplasia of the circular muscle fibres, with no change in any stricture of the pylorus. The stomach, when it had not been emptied before opening the abdomen by the passage of a tube, was always found distended to a marked degree of tension; the duodenum was always empty and collapsed. It was perfectly evident that the tumor formed a complete obstruction of the canal. In the earlier cases where the operation was continued without emptying the stomach with a tube, the various manipulations never forced the air in the stomach through the tumor into the bowel. The bowel remained collapsed and ribbonlike up to the moment of removing the clamps, when it would balloon out, and the advancing column of air could easily be followed as far as the jejunum was exposed. No hydrostatic test could more clearly prove the existence of a complete block, though the degree of tension was not determined. In none of the eighteen cases was there any accompanying congenital malformation, though in one a particularly short mesocolon made it impossible to do a retrocolic gastrojejunostomy. Other observers had reported accompanying congenital malformations. In presenting this series of twenty cases, which was the largest heretofore published in America, he wished to bring out the fact, first, that the mortality had been reduced below that claimed by any method of nonsurgical treatment, and, second, and of equal importance, that the ultimate condition of the patient was that of a normal individual.

BOOK REVIEWS

Genito-Urinary Diseases and Syphilis—By Edgar G. Ballenger, M. D., Adjunct Clinical Professor of Genito-Urinary Diseases Atlantic Medical College; Editor Journal-Record of Medicine; Urologist to Wesley Memorial Hospital; Genito-Urinary Surgeon toDavis-Fisher Sanatorium; Urologist to Hospital for Nervous Diseases, etc., Atlanta, Ga., assisted by Omar F. Elder, M. D. The Wassermann Reaction by Edgar Paullin, M. D. Second Edition Revised. 527 pages with 109 illustrations and 5 colored plates. Price $5.00 net. E. W. Allen & Co., Atlanta, Ga.

The advances in the knowledge of genito-urinary disease and syphilis have been so rapid during the past few years, that an adequate treatise of yesterday, becomes "past history" to day, and to keep the work abreast of the times it became necessary for Doctor Ballenger to revise his book-which now incorporates all of the latest discoveries in this important specialty. The following notable improvements are incorporated in this edition. The more satisfactory treatment of gonorrhea; vaccine therapy; Rountree and Geraghty's test for functional activity; pyelography; the Wassermann reaction and leutin test; the cultivation of the spirochaeta pallida; the use of the dark field illumination in the demonstration of the spirochaeta pallida; the inoculation of animals with syphilis, and the discovery of salvarsan and neosalvarsan.

Much space has been devoted to the treatment of gonorrhea, prostatic disorders, the diagnosis of renal affections and the diagnosis and treatment of syphilis, especial detail being given to the indications, contraindications and technic of the administration of salvarsan and neosalvarsan. A full description is also given of the technic and interpretation of the Wassermann and luetin tests. The author advises the prolonged action of a four or five per cent. solution of argyrol which in his hands is known to produce cures in from four to five days. He claims that little irritation is produced by this treatment, and the discharge hardly shows after the first treatment. The chapter dealing with this subject includes the cure of 700 cases, within an average of five days or less for each patient.

A summary of each chapter has been added to aid the student for the review of the subject when preparing for examinations and quizzes. The work on the whole is very satisfactory.

The Medical and Sanitary Inspection of Schools. By S. W. Newmayer, A.B., M.D., in charge of the Division of Child Hygiene, Bureau of Health, Philadelphia. 12mo, 318 pages, with 71 engravings, and 14 full page plates. Cloth, $2.50, net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

Public health work is no longer limited to the physician and the health officer, but is of great importance to every intelligent person. The sanitation of the school and the health of the pupils, with its widespread application, is acknowledged to be the most important phase of the public health problems of today. The volume by Dr. Newmayer is an authoritative work covering detailed and concise information on efficient organization and administration of school inspection; the physician employed in or contemplating such work will find instructions in methods of diagnosis adapted to school examinations, which differ vastly from college teaching or private practice. The methods which bring the best results, both in the prevention of epidemics, and in the correction of physical defects, are given in detail.

Civil service examination questions are appended for those desiring to prepare for competitive examinations.

The nurse and her relations to the work, to the physician, the teacher and the home are given in full. Chapters are devoted to inspections when physicians are not available.

For the teacher and other school authorities there have been included methods of cooperation and such valuable data as, how to teach the fundamental laws of health; definite and accurate information on the relation of mentality to physical conditions; new and common-sense views on the non-promoted, backward and mentally deficient child.

The sanitation of the school building and grounds is given full consideration, and a simple and very practical method of recording all information for the benefit of the child and the school is included. Instead of the citation of many examples, a complete system of records is presented. A large subject has been adequately covered in one small volume. The illustrations are not only numerous, but have been chosen to aid the reader.

Causes and Cure of Crime. By Thomas Speed Mosby, Member of the American Bar; Former Pardon Attorney of the State of Missouri; Member American Institute of Criminal Law and Criminology. Author of "Capital Punishment," "Youthful Criminals," "Alcoholism and Crime," "Mother of Bad Boys," and Other Essays. Illustrated. Price $2.00. St. Louis: C. V. Mosby Company, 1913.

The study of the statistics of crime and its cause will amaze the student of crimnology. The cost of crime in the United States amounts to one-third the total cost of the Government, and the burden is yearly increasing. Crime is seven times more prevalent in this country, at the present time, in proportion to population, than it was sixty years ago. This little volume represents the views entertained by one of the leading criminologists of the country who has devoted much time and thought to the study of crime and the criminal. The text matter of this volume forcasts the aim and intent of those who are working for the new penology and is based on the premises that crime is in most cases the outcome of a diseased mind.

Throughout the volume the author has sought to discover and portray the present status of scientific investigation upon the various phases of crime and criminals, he quotes freely from the leading authorities, sometimes with approval, sometimes for the purpose of recording a firm dissent, but always with profound respect for the great minds which have preceded him in this field of important research.

The author stands for prison reforms, the use of hospitals instead of the penitentaries, the conservation of man instead of his degradation, when overtaken by crime. The author states that a suppression of crime is a problem which can be handled more satisfactorily by physicians and economist, than by judge and jury. But perhaps we had better leave the valume to speak for itself, we are sure it will interest all, even if it should fail to instruct.

THE LAUGH OF A CHILD

The laugh of a child will make the holiest day more sacred still. Strike with the hand of fire, O weird musician, thy harp strung with Apollo's golden hair, fill the vast cathedral aisles with symphonies sweet and dim, deft toucher of the organ keys; blow, bugler, blow, until thy silver notes do touch and kiss the moonlit waves, and charm the lovers wandering 'mid vineclad hills. But know your sweetest strains are discords all, compared with childhood's happy laugh—the laugh that fills the eyes with light and every heart with joy. O rippling river of laughter; thou art the blessed boundary line between the beasts and men, and every wayward wave of thine doth drown some fretful fiend of care. O Laughter, rose-lipped daughter of Joy, there are dimples enough in thy cheeks to catch and hold and glorify all the tears of grief.—Robert G. Ingersoll.

PEDIATRICS

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EDITORIAL

GASTRO-INTESTINAL HEMORRHAGE IN THE NEWBORN

Gastro-intestinal hemorrhages in the new-born, that is to say, within fifteen to twenty days after birth, are of rare occurrence, but in this country have scarcely received the attention their gravity deserves. The importance of these attacks is so considerable and the disorders they may bring in their train are of so grave a nature, that it behooves the physician to give the subject at least a certain amount of study so that he may know how to act when he finds himself in the presence of an accident of this kind. Much of the current literature bearing on the subject has been contributed by Frenchmen, who are always well to the front, both in investigating and treating the diseases of children. As is well known, melena in infants is often spurious and not in any way symptomatic of an organic change in the digestive tract, but is simply caused by blood swallowed by the infant, and then discharged either by the mouth or rectum. In a case of melena proper, symptoms vary with the quantity of blood lost. If the hemorrhage is scanty, general symptoms are lacking; on the other hand the phenomena usual with large losses of blood are present, except that the fall of temperature does not always exist. Melena neonatorum occurs in the majority of cases within from three to ten days from birth, more often within three. The cause of many of these hemorrhages is obscure; occasionally ulcers of the stomach or duodenum have been found, but in most instances the hemorrhage has been capillary, and nothing but a congested state of vessels has been discovered. Grandier and Ritter have given as a probable cause a condition allied to hemophilia.

Fortunately, cases of melena proper are few and far between· According to Bahl and Hecker, 8 cases occur in 4,000. Spiegelberg says 2 in 5,000, and Genrich, 1 in 2,800. In treating infants suffering from melena proper, no nourishment must be given that has a tendency to congest, the suckling at the breast should be prohibited, the feeding should be effected with a spoon, containing either mother's or goat's milk diluted with iced barley water. The skin should be rubbed to arouse circulation, and above all the respiratory movements of the infant should be left perfectly free. The application of heat is beneficial. The French pin their faith to the use of the "couveuse," and their physicians have tested this method with the most encouraging results. The "couveuse" was first invented by Dr. Farnier, and in 1893 was improved upon by Dr. Lyon, of Nice, and may be described briefly as a woven wire mattress suspended in a glass case, the latter being heated by a water coil, and kept sweet and wholesome by a constant inflow of purified filtered air. The infant, wrapped in cotton wool, is placed in this receptacle, heated at a temperature of from 35 to 37 centigrade, and is kept there until convalescence is established. When the "couveuse" is not obtainable, Loranchet advocates enveloping the infant in warm cotton wool. Hermary strongly recommends friction with alcohol· Opinions differ as to the effectiveness of medicine administered internally. Hermary advises perchloride of iron, Eustace Smith suggests gallic acid, extract of kameria, or oil of turpentine in mucilage. Oni, on the contrary, deprecates the internal use of medicine, on the grounds that the stomach, before everything requires rest, and prefers subcutaneous injections of ergotine. When the anemia is severe, Lutin, Hutinel and Weiss advise injections of a weak solution of chloride of sodium; inhalations of oxygen when possible, artificial respiration and injections of ether are often of benefit.

After the bleeding has been finally arrested, the infant will need careful overlooking for some time, and if syphilis has been diagnosed as the cause, mercurial treatment should be commended without further delay.

DANCING DISEASE

In our October issue we referred editorially to the Eugenics of the Modern Dance and cited the fact that among all races and civilizations dancing has been, and is now intimately related to the sexual life. With many peoples, it is too well known, that dancing is the mere prelude to sexual indulgence, and every civilization of the past was sullied by the licentiousness and wanton abandonment of the dance.

There is grace, beauty and "poetry of motion" in the Virginia Reel, the Lanciers, the Two Step or Waltz, but the bewildering ubiquity of the "tango," the "trot," the "bunny hug," the "slow drag" and various other modern dances, nor the syncopated cries of their defenders that they are but an impression of rythmic righteousness, should bewilder the unwary; yet it does, and the disease is already epidemic, and if we turn for information and relief to the Encyclopedia Americana. There we find the following under the heading "Dancing Disease:"

"An epidemic nervous disorder, apparently allied to hysteria and chorea, occasionally prevalent in Germany and Italy during the middle ages. As it has been in every instance chiefly propagated by physical contagion, like chorea, there is every reason to conclude that it had a like origin. In 1734, during the celebration of the festival of St. John at Aux-la-Chapelle, the streets became crowded with men and women of all ranks and ages who commenced dancing in a wild and frantic manner, many losing entire control over themselves and continuing to dance until dropping down from fatigue. The mania spread to Cologne, Metz and Strausburg, and gave rise to much imposture, proffigacy and disorder."

If taken literally this is a grewsome explanation of the modern terpsichorean movement. Where we are led to believe we were being ravished by the beauties of a dance we now see we are being ravished by the terrors of a disease, which is more serious, apparently, with the female than with the male since she willingly allows certain terpsichorean movements, and sensual gyrations which are "bold and bad" enough to cause our grandmothers to turn over in their graves. We are fast becoming a world of saltatory invalids, and the "poetry of motion" has been degraded, to a saltatorial "slow drag" which the police of New Orleans prohibited from the "free and easy" dance halls of that city fifteen years ago.

THE DUTY OF PHYSICIANS

Versus the Modern Dance

During the present era of social unrest, it is but natural that the emotions of the populace should be blown hither and thither. It is natural that standards of conduct should suffer a severe disturbance. The present day dancing gives evidence of the emotional unrest, the seeking of new fields for excitement, the gratification of impulses which have been roused by the free discussion of themes related to physical life (says the editor of the Medical Review of Reviews).

"When the two-step sought for favor there was a widespread opposition to its introduction and the praises of the waltz were sung. The new dances with their origin in the underworld have made a strong bid for popular approval. It is time to ask, "Have they come to stay?" Prophecy is a difficult art and a most dangerous one. Viewing modern dances with their suggestiveness, exaggerated movements and appeals to sexuality, it would appear that we have reached the acme of social riot. One hears the statement constantly recurring, "These dances can be danced properly. They are harmless if the participants but conduct themselves with dignity and decorum." The implications of these statements are that definite action must be taken to insure safety in dancing the tango, the turkey trot, and the various other dances of animal names and nature.

"Is there not a medical argument against these dances which has not been fully appreciated by parents, ministers, reformers, physicians and chaperons? Dance neuroses are making their appearance. Sexual neurasthenias, pelvic congestions, prostatorrhea, priapism, congested prostates, and spermatorrhea represent some of the evidences of the physical and psychical influences of the dances which at present have secured a hold upon the dancing public. The fact that men are rushing to the dance, that old men are hastening to cavort in the gliding mazes, is indicative of the stimulating and rejuvenating qualities of the alleged graceful terpsichorean fads of the day. That a few persons may withstand the physical abuse resulting from the peculiar rhythm, the close contact and sinuous movements, does not counterbalance the pernicious effects of these actions upon the multitude. In the words of Marcus Aurelius, "What is not good for the swarm is not good for the bee."

"The introduction of dance halls in connection with saloons, the establishment of dancing areas (Cabarets) in cafes and restaurants, attests the popularity of the free revelries of dancing. The combination of dance with alcoholic stimulants, the setting of the scene in appealing lights and attractive color, the bewitchery of syncopated music, the diaphanous feminine attire, are all concomitants tending to accentuate the physical nature of modern dancing and are indicative of the real nature of the lustful appeal to the participants in this modern sexual diversion.

"Among the fine arts dancing requires no defense. Its beauty, grace and ecstatic movements are crowned with the glory of joyousness and exhilaration. When, however, such popular healthful amusements evidence degeneration and are prostituted for the development of sensual stimuli, the dance no longer should receive the support of the intelligent and moral parents who aim to safeguard their growing children. "The light fantastic toe" offers an opportunity for exercise, development and amusement, and recreation and has a field of desirable usefulness. If art must be debased, let it remain in the brothel and not be flaunted in the dancing academy, the reception hall, and the home. It is as unwise as it is socially malicious to create unnecessary stimuli that irritate and augment the sex characteristics of the dancing population. The modern sensual dance is opposed to the best interests of society and tends to a marked though insidious deterioration of the morality of the dancing public. Let physicians counsel their patients in the light of their undertaking and unhesitatingly speak forth publicly the truth concerning the demoralizing physical and psychical effects of the degenerate erotic dances, animal by name and nature."

ALCOHOLISM IN NURSING MOTHERS

A case was narrated a short time ago in the Bulletin de l'Academi Medicine of an infant that suffered from grave symptoms through alcoholic indulgence on the part of the wet nurse. This nurse doubtless thought that by indulging freely in alcoholic stimulants she was not only giving credit to herself but at the same time doing her duty by the baby. The belief is still widespread, that a generous allowance of alcohol is necessary for the production of breast milk in sufficient quantity and quality. The superstition has been handed down from generation to generation, and is hard to kill. It is superfluous to say that it is quite an erroneous one; certainly, nursing mothers should partake of a liberal diet, but stimulants are not a necessary part of it. In some cases, perhaps, the use of alcohol in moderate quantities is indicated, but as a rule it is unnecessary as well as harmful. If the milk is not so plentiful as it should be, the mother should eat plenty of farinaceous food and good butcher's meat, and drink cow's milk.

POLIOMYELITIS!

Last night I had the strangest dream, perhaps you'd like to hear,
I played and ran with other boys, nor thought it strange or queer.
So when I woke at early dawn, I felt quite bad at first;
I was afraid I'd wake poor Ma, as into tears I burst.
I can't move arms or legs you see, I've been four years in bed,
I've infantile paralysis, that's what the doctor said.

I ofttimes say what pity 'tis to worry mother so,
For I can see that often she some pleasure must forego.
Whereon she, smiling, makes reply: "Tut, tut, you foolish boy!"
And then she brings me up some food which she thinks I'll enjoy·
But when I want to eat my piece, someone must hold the bread,
I've infantile paralysis, that's what the doctor said.

Sometimes Ma moves the bed around, so I can see home-plate,
You know they play base-ball out here, I tell you what, its great!
One day Red Devlin muffed the ball; I thought that I would root,
So I called out with all my might: "Oh, you great big galoot!"
Just then my mother turned her face, I saw a tear she'd shed.
I've infantile paralysis, that's what the doctor said.

I've always thought I'd want to be what's called an acrobat,
A man who turns and twists himself. Oh my, but I'd like that!
My mother says they often fall and hurt themselves quite bad.
Should such a thing occur to me, she'd feel most awful sad.
If I were trav'ling with a show, she'd be in constant dread;
I've infantile paralysis, that's what the doctor said.

When I grow up to be a man, there's one I'll go to see,
She's such a pretty little girl, who may remember me.
Her brother brought her up one day, to see the crippled boy.
She put a whistle 'tween my lips; it is my only toy.
To-day my mother spoke of her, I felt my face grow red.
I've infantile paralysis, that's what the doctor said.

Dr. J. A· Hagemann.

PEDIATRICS

ORIGINAL ARTICLES

TRAUMATIC INJURY OF THE KNEE

A Clinical Report

By A. D. WILLMOTH, A.M., M.D.
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About four weeks ago a boy, aged seven years, was violently thrown from a wagon to the street, and sustained an injury to his right knee. While not rendered unconscious, he had to be carried home, and the knee soon became considerably swollen. Since then his leg has remained fixed at the knee, and he walks on his toes with more or less difficulty and a decided limp. Examination reveals no evidence of fracture or dislocation. There is still considerable swelling of the knee.

In the investigation of joint injuries one should bear in mind certain important anatomical bony landmarks. For instance, at the knee there are external and internal condyles of the femur, the upper end of the tibia with its ligamentous attachments and bursae, and the patella. So far as the bony structures are concerned in this case, everything appears to be in normal relationship. The leg can be flexed without causing marked pain. but it is impossible to secure complete extension· In explanation of this it is noted that the so-called "hamstrings," (particularly the inner hamstring composed of the tendons of the gracilis, sartorius, sememembranosus, and semitendinous muscles) are put tightly on the stretch; i. e., these guard against hyper-extension of the leg. Any attempt to extend the leg produces spasmodic contraction of the muscles, and in consequence there is partial fixation of the knee joint.

The mother states that she "used local applications of antiphlogistine and paracamph" (patent medicines) to relieve soreness and swelling. While it is doubtful whether such preparations possess any virtue, still they are not contraindicated since they give the laity something to do, i. e., remedies for local application to injured joints, inflamed surfaces, etc. Local applications accompanied by vigorous rubbing may result beneficially in relieving soreness, stimulating the circulation, and reducing hyperemia, and thus assist in overcoming stiffness.

Four weeks have elapsed since the injury was inflicted, and while nothing has been done in the way of treatment from which decided benefit might be expected to accrue, yet movement of the knee joint causes no marked pain. However, if partial fixation of the joint be permitted to continue, there would eventually result a false ankylosis· While originally some damage may have been inflicted upon the joint structure, this seems doubtful inasmuch as there is no pain nor tenderness; swelling is inconsiderable, inflammation slight, there is no indication of joint infection, nor have there been symptoms indicative of acute osteo-myelitis, acute periostitis, or acute arthritis. There undoubtedly occurred following the accident, however, considerable swelling and inflammation of the structures about the knee, and as a logical result the joint is now more or less fixed. The spasmodic action of the muscles, preventing complete extension, is merely an effort on the part of nature to relieve the slight hyperemia and inflammation if any exists.

In this connection, the writer does not believe that inflammation ever exists without infection and possibly suppuration. There is first (a) an hyperemia, (b) an excessive amount of fluid in the part, (c) the formation of new material (from infection) whether in bone, muscle, fascia or elsewhere. And when the lesion occure in ligamentous joint structures, a stiffness or temporary false ankylosis is the natural result. In this case if the leg be permitted to remain in its position of partial flexation, the range of motion of the knee joint would soon become greatly minimized, it would become practically fixed and almost as rigid as if bony (true) ankylosis had occurred. However, the condition would merely be one of false ankylosis, as true ankylosis can occur only where a joint is so involved that there is bony union of the upper and lower bones—in this instance it would be the upper end of the tibia and lower end of the femur. That is the only way true ankylosis can occur, but false ankylosis may result from injury to the ligamentous structures, or even the peri-articular tissues, provided the joint be allowed to remain in a fixed position for an extended period. Therefore to prevent permanent stiffness, the patient should be encouraged to use the leg moderately. However, if immoderate use be permitted, such as violent exercise, running, jumping, etc., serious joint involvement might eventuate. There might later occur implication of the epiphyseal line of the tibia, the femur, or both. This feature should be carefully considered and use of the leg restricted, encouraging only sufficient movement to prevent adhesions of the soft structures. After adhesions have occurred manipulation under general anesthesia becomes necessary for their reduction, and such a procedure is not entirely devoid of danger. For instance, in dislocation of the shoulder joint, if the patient insists upon carrying his arm in a sling, in a short time the arm becomes fixed in that position resulting in a stiff shoulder, and administration of a general anesthetic before the adhesions can be overcome. Such fixation is more common in the upper than the lower extremities, as in the latter the patient can be encouraged to use the limb and thus avoid the formation of adhesions. With non-use it would not be long before this boy would have a stiff knee, with the leg in an abnormal position, and measures must be instituted to prevent this.

What should be done in a case of this character? The tumefaction has partially subsided, and the patient has a more or less fixed knee joint which is distinctly painful when complete extension is attempted. The first indication is to place the leg in a position as nearly normal as practicable, by the use of gentle manipulations, massage, etc. If force be not used in massage and movement of the joint, no harm can result; but if handled roughly and inordinate force applied it can be readily understood damage might be inflicted. If adhesions have already occurred, there would be danger of tearing the soft structures. The popliteal artery and the nerves in this situation have been injured by the application of too much force in efforts to straighten the leg. If proper care be exercised, movement can be gradually increased during each successive treatment. First, the leg should be flexed, then extended as far as consistent with safety, increasing the movements gradually at each treatment. Massage will also be of benefit, either by means of one of the vibratory devices or with the hands. There is much to recommend the mechanical vibratory massage apparatus for relieving muscular stiffness and soreness. The employment of a lotion with friction is also good treatment, and this is where liniments accomplish much benefit. If the mother be given a liniment with which to rub the boy's knee, and be instructed to "rub it in well two or three times a day," benefit will accrue from the massage thus practiced; whereas if she simply be told to massage the knee the chances are she would fail in doing so, the treatment would not be continued more than five minutes at each seance, and after a few days if no improvement could be noted, the treatment would be discontinued. However, with a liniment and instructions that the knee must be rubbed until the medicine disappears, massage will be practiced for half an hour at least two or three times a day. The character of the liniment makes little difference, but preferably it should be some oily substance. It will take longer to "rub this in thoroughly," and thus a greater amount of massage is secured. The faradic current might be used with benefit, particularly as considerable time has elapsed since the injury. The faradic current followed by massage two or three times a day, with flexion and extension of the leg, will oftentimes result in prompt improvement, and if faithfully continued, will effect a cure.

When treatment is delayed until adhesions of the soft structures have occurred, there remain two methods of treatment, either of which may prove effective. One is to administer a general anesthetic and thoroughly separate the adhesions, then apply the measures already outlined from time to time as required. Second, Buck's extension apparatus may be employed. To accomplish the desired results the latter method requires a number of days, or it may be weeks. The treatment is exceedingly trying, even to adults, and is infrequently employed in children. However, if for any reason a general anesthetic cannot be administered, by the application of Buck's extension apparatus with proper weights, the limb may be straightened provided the treatment be continued a sufficient length of time. By following the use of this apparatus with active and passive movement, massage and the employment of electricity, the leg may be prevented from again becoming fixed in the abnormal position. If the patient be a child, prolonged observation is sometimes necessary, and treatment should be continued until the desired results are obtained. Tubercular involvement not infrequently follows traumatism inflicted upon the knee, and when this occurs prompt treatment is demanded to prevent total destruction of the joint.

In this connection a few words may be permissible concerning the examination of the limbs of patients in general:

In examining a healthy or diseased limb, always compare it with the opposite side. Oftentimes an abnormal limb might escape detection without such comparison, in fact, few individuals are perfect in conformation. Careful measurement of both legs of almost any individual will show that one or the other is longer or larger, that the bones are not of the same length or exactly the same in shape. Therefore the two limbs should always be compared, and especially is this true in children, otherwise a mistake may be easily made. Suppose, for instance, that a child's limb is perfectly straight, but one knee is slightly swollen, showing evidence of a lesion of some kind· One should investigate the opposite knee to obtain an accurate idea of the normal conformation of the child's limb. Of course there might exist an abnormal knee on both sides. This sometimes happens in persons who have sustained no injury, yet who claim to have been permanently disabled, and an error might be made unless the surgeon is careful and painstaking in his investigation. The patient may feign an injury, by reason of having a limb which he knows to be abnormal. This has been illustrated many times in lawsuits for damages and malpractice.

It is necessary for the surgeon to determine what is the normal limb for that particular individual, and be able to state positively after his examination whether or not an injury has been inflicted.

MUNICIPALITIES AND INFANT LIFE

BY RICHARD CATON, M.D., L.L.D.
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The last half century has witnessed a remarkable awakening among municipalities as to the responsibility resting upon them for the health and life of the people.

The change that some of us have witnessed in our own life-time is marvelous and full of encouragement for the future; one of its phases is solicitude for the well-being of infancy and childhood.

I propose briefly to trace some of the efforts of one municipality—that of Liverpool—to guard and protect its infant citizens at the time of their entrance into this world, and during the earlier steps of their progress through it. Time and space will not allow me to go beyond the period of infancy. The changes I have to narrate are largely the result of the labors of our Health Committee and of our excellent Medical Officer of Health and his staff. Many of the details are taken from Dr. Hope's reports.

I am afraid we have not done as yet much in the infants interest to help the poor woman who is about to become a mother by amending her diet and guarding her from too arduous labor. This has been attempted in France; but we have tried to teach her some general principles in regard to the course of life she should pursue to render herself healthy and fit for the great responsibility of motherhood, and to explain to her the rules that should guide her before and after the birth of her child, for the benefit of both. This is done in part by our schools for mothers.

The vast majority of births are attended by midwives in the mother's own house—provision being made for the transference of the mother to a hospital if difficulty or complication should occur. In former times, the midwife being too often of the school of Mrs Gamp, a dangerous degree of ignorance and uncleanliness prevailed; but by the operation of the Midwives Act of 1902 the perils thus arising have been greatly reduced. During the year of 1912 only thirty-five births took place under the charge of uncertified midwives. Moreover, a constant supervision is exercised over the methods and apparatus of the certified midwife, and any woman who is found to be careless and uncleanly is dealt with. As a result, the type of attendance on the parturient woman is rapidly improving; for example, it is the rule that the midwife shall take and record pulse and temperature at each visit. Wherever real difficulty or danger occurs, skilled medical help is obtained at once, or in bad cases the patient is removed to the Maternity Hospital. The results, on the whole, are very good.

The child thus makes his entry into the world under fairly favorable conditions. If there is anything abnormal about him, skilled medical aid is at once obtained; if, for instance, that terrible disease, Ophthalmia Neonatorum, occurs (a disease which causes life-long blindness if not promptly treated) a specially trained female Sanitary Inspector visits the case, and professional aid is at once secured. Provision has been made for the reception of both mother and child in a special hospital, and the measures there adopted nearly always save the child's sight.

Under the Notification of Births Act information of each birth is given to the Medical Officer of Health within thirty-six hours, and every mother in the poorer parts of the city is at once visited by a female Sanitary Inspector. More than 20,000 such visits are paid annually. The mother is helped and advised about her own health and that of the child, if such help is needful, while cards giving simple and easily understood rules for the care of the infant are distributed. There is great need for this guidance, for the ignorance of some of these poor mothers is appalling. Such articles of food as red herring or sausage have often been observed to be given to a baby a week or two old, also whiskey, brandy, or gin. I once saw a mother cram her baby's mouth with pork pie. All this is done with the best intention, but with the most fatal result.

The absolute necessity of feeding from the breast is urged, and the avoidance, if possible, of all other food. When bottles are needed, care is taken to prevent the use of long tubes, or of any kind of bottle that cannot be readily cleansed. Bottles have often been found so foul that the contents when given to an animal have rapidly caused death.

If it is thought that the nursing mother is herself insufficiently fed, rations of good cow's milk are supplied daily for her own consumption by the city. When it is impossible for the mother to give the infant its natural food, the city provides a form of specially humanized cow's milk of varying strength for different ages at a low price, or, when necessary, gratuitously. The cost to the city for this provision is about $15,000 a year. No food, of course, can be as good for the infant as the breast milk, but still the death rate among the 3,000 or 4,000 children who receive this humanized milk is very low, and a great number of lives are thereby saved. In those cases in which unhappily the poor mother is compelled to leave her child and spend the day in labor, the creches or day nurseries in various parts of the city, established by private benevolence, receive the infant. Its diet is supplemented; it is kept clean and tended during the hours of the mother's absence.

In the primary schools the girls, especially in the higher standards, receive instruction in the simple rules of hygiene and house management, the importance of air, light and sun, the need of cleanliness of the person and the house, the rules of diet, the evils that follow the taking of alcohol, and the general rules of nursery management and the dieting of infants. These elder girls have much to do with the infants and young children in their own households; they are commonly the nurses of their younger brothers and sisters, they act as sanitary missionaries in the house, and when, in their turn, they become wives and mothers, the knowledge thus acquired will prove of great personal value. Medical consultations for infants have been established in the city.

When a young child ceases to be nursed from the breast much depends upon the cow's milk it is supplied with. Great care is taken in Liverpool to prevent the selling of milk containing tuberculosis or any other infective material. Every cow, every cowhouse, every dairy, every milk shop, in the city is inspected, and all milk coming in from the country (which is much more frequently in fault than the town milk) is carefully tested. In order to detect the presence of tuberculous viris in the milk, samples are constantly being administered to guinea-pigs, and if tubercle is thereby caused in the guinea-pig it is invariably found that the milk given has come from a cow infected with tubercle, and the milk from that farm is no longer allowed to enter the city. Thus the young are in most cases guarded from this form of tuberculous infection. Cases of severe whooping cough and measles in infants are taken into Corporation Hospitals, whereby recovery is rendered more rapid and the spread of infection is checked.

About 84 per cent of the cases of scarlet fever occurring are taken into Corporation Hospitals with conspicuous advantage. Whereas fifty years ago out of every 100,000 of our population 200, 300, or even 370 deaths took place annually from scarlatina, the mortality now is only from 15 to 30 in the 100,000.

Smallpox among vaccinated children does not occur at all with us during the first two years of life, but among the unvaccinated it causes a mortality of 57 per cent. of those attacked. This lamentable fact is, of course, entirely due to unwise legislation. While the disease is merely sporadic as at present, segregation in hospital usually keeps down the number of cases, but if an epidemic should occur there will, I fear, be a great massacre of the innocents, as well as of older persons, for the number of the unvaccinated is increasing yearly.

The diphtheria mortality in infants, as well as in adults, has been greatly reduced.

One of the most serious causes of infant mortality is the prevalence of epidemic or zymotic diarrhœa, occurring in the autumn, especially in years of high temperature and small rainfall. This ailment seems to be due to errors in diet, especially the use of food which is decomposing and becoming putrid. The infective action of the common house fly appears to be in part the cause of this decomposition. Infants fed from the breast suffer scarcely at all, those fed otherwise show a mortality fifteen-fold as great. We lose from 500 to 1,600 children per year from this cause·

Strenuous efforts are made on the one hand to instruct the people as to the feeding and management of infants, and on the other to banish the causes of contagion. Ash-pits in which offensive refuse accumulates are being rapidly done away with. Over 116,000 closed metallic ash-bins have been substituted; these are emptied every two or three days. A strenuous campaign against the househond fly is being carried on. The accumulation of stable or cow-house manure is prevented in densely populated areas. More than 400,000 rooms are examined every year, defects reported and cleansing orders issued when needful. Everywhere an abundant and constant supply of pure water in given to the people. Cellar dwellings are being done away with as rapidly as possible, none having a floor level of more than 2 feet below the street are permitted, and of these only 1,600 now remain. More than 11,000 dirty or infected houses are purified, and usually about 29,000 sanitary conveniences are cleansed and put in order annually. Every drain in the city, of course, is systematically flushed with the hose at frequent intervals; streets and passages are cleansed with the hose, once or twice, or thrice a week, where it is found needful, and about one million square yards of street surface are treated with dust-fixing composition·

During the atumn of 1911, when the great general strike in Liverpool stopped all sanitary work, such as the clearing of ash-bins and ash-pits, and when difficulties occurred in the food supply, zymotic diarrhœa became more fatal than any other year.

Insanitary dwellings are an important cause of infantile mortality. The Municipality has destroyed a vast number of them, caused the alteration and amendment of others and erected some thousands of healthy and sanitary houses which are placed at the disposal of the poor families ejected from insanitary dwellings. These tenants do not pay a rental representing the full cost of their dwellings, and the remainder of the cost falls upon the taxpayer. Under these circumstances, it is reasonable that a strict supervision of these tenements should be exercised. After due warning, drunkenness and other vice or misconduct, dirty or disorderly habits render the tenant liable to expulsion. The results have been greatly improved conduct and a marked fall in the death-rate, especially among the infants. Year by year this reform is being carried out with satisfactory results. Furthermore, wide streets and open playgrounds for the children are being provided· Also a great number of public park and open grassy spaces with trees and seats where infants and children can enjoy the sun and air. These are expensive, but are important boons for the congested population of a city.

There are, however, certain other factors which are of great moment in determining the death-rate among infants. The morals, the intelligence, the common-sense of the parents, especially the mother, are of great importance.

In a group of three or four families occupying adjacent houses, and engaged in the same kind of labor, the widest differences in infant death-rate are found to prevail. In one family all the children survive, while in a second only half, and in the third nearly all die. Drunkenness and other vices, carelessness, ignorance, and idleness are the causes. The removal of these evil moral conditions is a more difficult task than the amelioration of mere physical defect. Religious and moral teaching, education and the practice of temperance are the remedies. All our primary school girls are now being taught hygiene, home management, sewing, the details of the nursery, and the feeding of infants, and they show great interest in these studies, both in theory and by practical experience in the creches· The teachers receive special training in these subjects.

The boys also are receiving like instruction, though on a more limited scale, in such subjects as temperance, and we must hope this valuable instruction will show important effects. The keen interest both boys and girls take in this subject is quite remarkable. Enough time has not yet elapsed for the results to show themselves.

Finally, it is encouraging to note that a great fall in the death-rate of infants has already been secured. In the year 1874 and about that time, out of every 1,000 children born, over 230 died during the first year. A gradual improvement has taken place ever since, with slight upward and downward fluctuations; last year this 230 per thousand had been reduced to 125 per thousand. This, of course, is still far too high a rate, but we hope for better things in the future.

I have read this paper in the hope that we may hear something of the work done by other municipalities who are making like efforts, and that we may learn from one another.

INFANT MORTALITY—WHAT IS OUR RESPONSIBILITY?

BY HENRY ENOS TULEY, M.D.

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The closing week of the year is the usual stock-taking time, and this is a good season for us to take stock as to our responsibility for the alarming infant mortality, much of which is preventable.

A study of statistics will convince the most skeptical of the justification for the existence of the many child welfare associations and the societies for the study of the prevention of infant mortality.

As far back as in 1893 it was shown by Eross from the study of the statistics of sixteen large European cities and including 1,439,056 children, that ten per cent. of the children born alive die within the first four weeks of life. This mortality was greatest on the first day and diminished each day as the child grew older. Further, congenital debility is given as the cause of deaths in 54 per cent. of infants which die within four weeks after birth. Prof. Irving Fisher in a report to the National Conservation Commission, states that in a series of 100 cases of premature births, 40 were preventable; of 100 children dying of congenital debility, 40 might have been saved, and of 100 children dying of venereal diseases, 70 might have been saved.

These statistics could be prolonged indefinitely but might prove wearisome and dull, but the lesson is obvious, something must be done, and the physician should be the guiding spirit in all altruistic movements looking to an amelioration of conditions responsible for this loss of life.

This problem is not exclusively an urban one, but concerns all, no matter whether in village or country and should receive attention from every thinking person.

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*Read by title before the Muldraugh Hill Medical Society, Munfordsville, Ky., December 11, 1913.

The unpreparedness with which the average graduate in medicine enters upon the practice of midwifery is responsible, I am sure, for the early death or invalidism of many infants which come under his care. I feel that I know whereof I speak on this subject, having taught obstetrics for a number of years. It was always with a feeling of dissatisfaction with existing conditions, which made it impossible to give a more thorough and comprehensive course of instruction at the bedside to the fourth year medical student. This should not only include observations in the progress of the normal puerperium, but instruction in the physiology of the first days of infant life. For the most part the practical experience of the medical graduate consists in viewing from the benches the delivery of two or three women, not seeing these patients or their babies again. A few enterprising ones among the graduating class may care for the pauper out-patients in their homes, but they lose much of value in the conduct and care of the case because they have not bedside instruction. Until these conditions are changed, and more attention paid to giving practical bedside instruction in obstetrics and pediatrics the average graduate in medicine will be but little better prepared than the experienced midwife. There are but few specialists in obstetrics; the vast majority of women must be delivered by the general practitioner, hence he should be well trained not only in obstetrics, but also in pediatrics—the latter I consider of fully as much importance as the former.

The study of pediatrics should include a thorough course upon the prenatal conditions which might possibly influence the strength of the child after birth. Conditions in the mother which might cause an unusually prolonged labor should also be studied; the proper significance of the fetal heart sounds, and other signs of impending fetal asphyxia; intelligence displayed in the care of the persistent occiput posterior positions; the more frequent employment of pelvimetry for recognition of pelvic deformities; placenta previa; the indications for and the scientific application of forceps, and when a version or Cesarean section should be advocated.

After birth, too little attention is paid to the infant—exposure is allowed; inspiration atelecatsis occurs by failure to extract mucus from the naso-pharynx; the cord is tied too quickly, thus depriving the child of its full share of blood;

the eyes are neglected, and it is casually handed to the nurse or an ignorant member of the family without further consideration. By failure to properly supervise the early attentions to the child which include protection from exposure, bathing and care of the navel, pneumonia and infections both general and gastro-intestinal may occur.

In other words, by giving exclusive attention to the mother in this period, equally critical to both mother and child, infantile morbidity is begun, which soon adds its store to the sum total of infant mortality.

In larger cities obstetrical clinics, employing a nurse for prenatal instructions among the ignorant and poor, will do much toward relieving this condition. By this nurse the pregnant woman is taught the necessity for maternal nursing, the importance of supervision and urinalysis by a physician during the last months of pregnancy, and is an invaluable agent at the time of labor in the prevention of maternal sepsis and morbidity. After delivery, under the direction of the attending physician, her supervision of the nursing of the infant and its general welfare does more to prevent the development of nutrional disorders than any other one factor. After all it is the feeding during the early weeks which is mainly responsible for the future development of the child. The enormous difference in the mortality between breast-fed and artificially-fed infants is convincing proof of the importance of this home supervision.

The question of feeding the newborn infant is paramount in a discussion of this kind. More cases of athrepsia malnutrition, and acute gastro-intestinal disturbances with a fatal ending have their origin in an improper diet during the first few weeks of life, than from any other cause. I do not believe there are as many mothers who wilfully discontinue nursing too early or refuse to put their babies to the breast as some would lead us to think. It is difficult to think any mother who is capable of doing so would refuse to nurse her infant after the dangers of artificial feeding have been carefully explained to her.

There are cases which do not seem to thrive upon the breast, or where from the slow appearance of the milk the infant loses so much ground that even after the milk comes a normal gain is very slow, or the child so reduced as to be greatly jeopardized. Owing to the infrequency with which the infant's temperature is taken, during the first few days, or more than a casual glance given it by the attending physician, starvation temperature is not recognized and valuable time is lost by the policy of doing nothing or waiting developments. The judicious administration of several feedings of a properly modified milk at this time will save much suffering and start the baby off properly when nature supplies the proper amount of breast milk. I would not be misunderstood as advocating the artificial feeding of all infants during the first week. It is the exception that this is indicated, but the intelligent recognition of the cases in which it is needed will save many babies.

In spite of opinions to the contrary, I am convinced that the proper interpretation of the infant's weight curve will do much toward saving babies and preventing their becoming so attenuated and reduced as to easily be a victim of any intercurrent infection of gastro intestinal disturbance. I have had under observation during the past few years, several such cases. These babies were bright, happy and contented; bowels for the most part normal and regular. Because of these facts they were not weighed for a number of weeks, only to find when weighed, that they had not gained. It was with difficulty in all of these cases that the proper adaptation of their food could be made to meet the demand of nutrition and cause a proper gain in weight. Any illness in a child of this kind is very poorly borne, this being especially true of the acute exanthemata, pertussis, pneumonia and the gastro-intestinal disorders. I do not plead for the universal adoption of the finer mathematical formulae in milk modification or adaptation, but do advocate a more serious and careful study of the subject by the general practitioner. By learning to think in percentages of milk and milk mixtures far better results will be obtained in those unfortunate infants deprived of a nourishing breast milk early in life, and must of necessity be put upon an artificial food. Just here I wish to go on record as advocating an adapted or modified cow's milk for artificial feeding to the entire exclusion of all artificial or prepared foods on the market. Some of these may have some place in the very temporary feeding of infants, but they are all found wanting as a continuous food, and are the cause of many nutritional disorders leading finally to serious morbidity or even a fatality.

The gospel of "Clean Milk" should be a part of the religion of the doctor who has much to do with the artificial feeding of infants. In small communities clean milk is difficult to procure, but due to the efforts of the Kentucky Experiment Station of the State College the farmer is learning the economics of scientific dairying, which of necessity speaks for cleanly methods of dairying and clean milk. The average country place or small farm, with one or two cows, was formerly the last place to look for clean milk or milk suitable for infant feeding. We trust the time is not far distant when at least one Certified dairy can be found in every county, which can be a model for the community.

We, as a profession, are responsible for lack of interest in the newer organizations looking to the social uplift of the people, for not taking an active part in the organizations which are studying the relation between social conditions and disease among children, and where no such welfare organizations exist, for not helping in their formation, that we may become a factor in stemming the tide of needless waste of infant lives.

The relation between the proper housing and the death rate, especially of infants, is most important and this subject has been recently statistically studied in the city of Glasgow by the Health Officer of that city, Dr. A. K. Chalmers, and Miss Dorothy Lindsay, formerly connected with the University of Glasgow· It was found by these investigators that crowding of families causes a high rate of mortality—33 per 1,000 when families occupied one room, 11 per 1,000 when the houses had four rooms or more. This investigation along all lines, as to age, sex, cause of death and death rate, showed conclusively that the crowding of families into one and two rooms was followed by increasing infantile mortality. It is manifestly our duty, then, as a profession, to interest ourselves where and how "the other half" lives.

In later infantile and child life the medical inspection of schools should be insisted upon. The importance of this cannot be disputed, yet the physician does not insist upon it in his own community, hardly raising his voice in protest over the neglect of this important prophylactic measure.

My time limit has about been reached. I appreciate the honor of being able to open the symposium today on these subjects of such vital interest to the welfare of the child, and this association is to be congratulated upon having a secretary who is so alive to the trend of the times and who has so wisely arranged topics which if properly discussed by the members present will bring out much of vital interest to the coming generations—our infant population.

THE EFFECTS OF CRIMINAL ABORTION*

BY LOUIS FRANK, M.D.

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A. F., female, colored, aged fifteen, had an abortion three months ago. Five weeks thereafter she developed high fever, severe abdominal pain, vomiting, an offensive vaginal discharge, i. e., the typical symptoms of acute septic infection. After remaining a week in bed at home under expectant treatment without any improvement, she was admitted to the Louisville City Hospital where she was operated upon by another surgeon. The record shows that both Fallopian tubes, both ovaries, and the appendix were removed. Drainage was necessary, the infection still being in the acute stage, and there has resulted a suppurating abdominal incision which now exhibits widely separated edges.

This patient is simply brought before you to illustrate some of the effects of criminal abortion. She is but fifteen years of age, she has had an abortion followed by pelvic suppuration, necessitating operation with drainage, and there occurred subsequent infection of the surgical incision.

In treating infected wounds of this kind, the primary object is to keep them as clean as possible and thus promote healing. Slight pressure demonstrates that some burrowing of pus occurred. My preference in such a case is to employ a wet dressing, after applying adhesive strips to bring the edges of the wound nearly together. It is remarkable what can sometimes be accomplished with wet dressings in wounds of this character. Fortunately, under present aseptic methods of operating, few instances of this kind are observed; none are practically seen in clean cases, and comparatively few where infection makes drainage necessary. Drainage has been reduced to almost an exact science, and can therefore be fairly well controlled. For instance, where a suppurating abdominal wound follows the opening of a large appendiceal abcess in the right iliac fossa, by application of adhesive strips, leaving a small space between the edges of the wound, the patient has the best chance of complete recovery. Such wounds usually close in from four to twelve weeks and almost invariably a large scar remains.

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*Clinical Lecture delivered before the senior class of the University of Louisville, Medical department, at the Louisville city Hospital.

Adhesive strips are therefore applied and over these a wet gauze dressing held in place by the customary binder. The wound will thus be kept clean and within six weeks healing ought to be complete. In cases of this kind it is my practice to place oiled muslin over the gauze pad before applying the binder. This keeps the wet dressing warm, obviates frequent changing of the dressing, and saves annoyance to the patient, it being necessary to change the dressing only once every six to eight hours. The wet gauze pad absorbs all discharge, the wound becomes clean, and healing is promoted.

While this patient says she is married, and that nothing was done to induce the abortion, in a fifteen year old girl either married or single the presumption is that the abortion was criminally induced. That her husband has never appeared at the hospital causes us to doubt the statement that she is married, and the fact that she had an abortion is also suggestive. Where abortion with subsequent sepsis occurs during the first pregnancy, in the absence of specific infection or other gross pelvic or constitutional disease which might act as a cause, though the woman may be married the presumption is that the abortion was induced. When shortly after the abortion there develop elevation of temperature, pelvic inflammation as evidenced by severe pain and vomiting, the typical symptoms of acute sepsis, one may be certain that the infection owes its origin to induced abortion.

This girl was operated upon in the presence of acute infection with plastic (serous and fibrinous) exudates in the pelvis. When such conditions follow abortion, no matter how strongly the patient may insist to the contrary, the presumption is that the abortion was induced, because a miscarriage which occurs naturally (if one may be permitted to use that term in connection with abortion) is not followed by infection in the absence of pre-existing inflammatory pelvic disease. Moreover, when impregnation and implantation of the ovum on the normal uterine mucosa has occurred, it is seldom dislodged without artificial interference. When abortion is followed by septic infection, in the absence of pre-existing intro-abdominal disease or an ancient infection which may have been relighted thereby, there is about one chance in ten thousand that the abortion was not criminally induced. However, it is useless to ask the patient whether or not the abortion was induced, because corroborative evidence is unnecessary; even if the patient says the abortion was induced that is not conclusive, it is merely one of a series of links of which the chain is composed. On the other hand, specific interrogation concerning the cause of the abortion may not only give rise to embarrassment to the physician but also to the patient and the family, provided the woman happen to be unmarried or one who should not have been pregnant; furthermore, rarely does such questioning develop the truth. This has been found particularly true in married women, who have every right to be pregnant and who should not induce abortion, i. e.. they do not under such circumstances tell the truth. When a woman admits she has had an abortion, in all likelihood an ordinary miscarriage did not take place, and if examination confirms the suspicion that the abortion was induced, the physician need go no further. It is a useless question to ask if the woman had the abortion performed. Women, as a rule, do not consider the induction of abortion a criminal act, although they know it is so recognized by the State laws, and that it is also a great moral wrong; but as human beings are not prone to confess to infractions of the law, nor to departure from what is considered morally right and proper, one rarely gets a truthful answer in these cases.

This is an illustrative example of what may happen following criminal abortion. Pelvic infection necessitating operation, an open suppurating wound, weeks in bed, probably a later hernia or a sinus which may persist for a long time, and above all the woman has been unsexed· I speak of this not from a moral or sociological standpoint, not that her child-bearing functions have been destroyed, but she has been deprived of physiological secretions which are necessary to properly maintain her nervous equilibrium and enable her to perform certain functions normally as nature intended. In woman the ovarian secretions are necessary to enable her to perform her mental and other physiological functions to the best advantage and to her greatest good. This patient is deprived of these advantages.

This is one of the results of criminal abortion which no one can afford to ignore.

THE TREATMENT OF ACUTE TONSILITIS IN CHILDREN

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Much has been said and written on the embryologic significance of the tonsils and the purpose they serve to the human organism. A great deal has also been said and written on the diseases and disturbances caused by the tonsils and the use and abuse of tonsilectomy, but very little attention has been given to the proper treatment of tonsilitis. It is looked upon by the average physician as a common and trivial affection which deserves only a few grains of calomel and a bottle of iron mixture as the sole therapeutic management.

Tonsilitis may be considered as an acute infectious disease caused by various pothogenic organisms especially the streptococcus or the staphylococcus or perhaps by the rheumatic organism, whatever it may be. It is characterized by a sudden onset with a chill or chilly sensations followed by a fever of from 102° to 105° F. and a rapid pulse. There is a headache, backache, pain in the limbs, malise, a coated tongue and constipation· It runs a definite course lasting from 3 to 5 days and terminates by lysis. The child complains of pain in the throat and difficulty in swallowing. On examination, the tonsils are swollen, and congested and there may be yellowish plugs filling the crypts.

Considering the etiology and the clinical manifestations together with the onset, course and termination of acute tonsilitis, it seems to deserve the dignity of being classed with the other acute infectious diseases.

Whether acute tonsilitis is in itself a form of acute rheumatic fever, or whether the diseased tonsils are the portals of entry for rheumatic infection and later manifesting itself as acute articular rheumatism, or chorea, or carditis, it has been repeatedly shown that tonsilitis is an important link in the chain of trouble which begins with the tonsils and ends with a crippled heart. While in the majority of cases of tonsilitis there are no complications or sequelae, it is well known that in many cases it has some association with rheumatic arthritis, cardiac diseases, nervous diseases, affections of the respiratory system and the skin. On examination of the tonsils, the physician cannot tell the kind of bacteria they harbor, but the fact that the same pothogenic organism has been isolated from the tonsils as from rheumatic arthritis and endocarditis, it tends to show that not all cases of tonsilitis are harmless infections.

In view of the possible association of some cases of tonsillitis with rheumatic infection and its unfortunate consequences, it seems strange that tonsilitis is being treated with such an indifference.

The treatment of acute tonsilitis should be the same as the treatment of other acute diseases. The child should be confined in bed, and kept there on a milk diet until the fever has subsided. The bowels should be freely opened with calomel followed by saline· Sodium salicylate should be given every three to four hours, the dose being regulated according to the age of the child. Phenacetin or antipyrin may be given for the relief of the pain. A few drops of Tr. ferric chloride in glycerine and water may be given every three to four hours, but this medicine should not constitute the only therapeutic armamentorium, as it is being done by some of our guardians of health. If the child is old enough to gargle the throat, it should be given a solution of hydrogen peroxide followed by glycothymoline, one part to two parts of warm water. If the child is too young to gargle the same can be used as a spray. A cold wet compress properly applied to the neck and changed every 2 or 3 hours will do some good. Children that are subject to repeated attacks of acute tonsilitis if tonsilectomy is not indicated or permitted, should always use a mild, pleasant antiseptic gargle, and during cold, damp weather should receive a daily dose of sodium salicylate as a prophylactic measure. While there is no specific remedy for tonsilitis, yet with proper care and treatment we may hope to prevent future trouble. It is not the purpose of this article to present anything new or original in the treatment of tonsilitis, but to emphasize the importance of the proper care and treatment which is so sadly neglected, much to the lasting injury of our little patients.

225 Henry Street.

SOCIETY TRANSACTIONS

SOUTHERN MEDICAL ASSOCIATION

Cerebrospinal Meningitis with Special Reference to Certain Signs of Measures.—Dr. Randolph Lyons of New Orleans read a paper based upon an analysis of twenty-one cases of cerebrospinal meningitis with the particular object in view of determining the relative importance of eight signs or measures in adults. The actual value of the procedures described could not be accurately judged by so small a series of cases, nevertheless the results were suggestive and appeared, in general, to be in conformity with the experience of others in the adult form of cerebrospinal fever. The relative importance of Brudzinski's signs had not, to his knowledge, been carefully determined in adults. From the point of view of early diagnosis the eight measures fell into the following order of importance: Lumbar puncture stood first amongst the special measures. The first puncture established the diagnosis in 95 per cent. of the cases. Next in importance was rigidity of the neck. This could be demonstrated in twenty out of the twenty-one cases on first examination or 95 per cent. Kernig's sign came third. It was present on first examination in 90 per cent. of the cases and at some time during the disease in 100 per cent. The "neck sign" fell into fourth place. They found that Brudizinski's statement with regard to the relatively greater value of his "neck sign" over Kernig's sign in children, did not hold good for adults. It was found positive on first examination in 76 per cent. of the cases and could be elicited at some time during the course of the affection in 90.4 per cent. Brudzinski's contralateral (identical) reflex came fifth on the list, being present on first examination in only 33.3 per cent. of the cases. Babinski's sign occurred in but three cases or 11.6 per cent. at some time during the disease. In two of the cases it was positive on admission. Macewen's sign was found to be of practically no value in this series. It could be demonstrated in but one instance. This patient was the only child (5 years) in the group. The field of usefulness of this sign seemed to be limited to meningitic affections of early childhood. Lastly, the presence or absence of the patellar reflex was found to be of no absence of the patellar reflex was found to be of no apparent diagnostic importance.

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*Medical Record.

Acute Nephritis in Children, with Special Reference to Etiology and Treatment.—Dr. H. M. McClanahan, of Omaha, Nebraska, stated that his personal observation was based upon twenty-one cases of nephritis in children ranging in age from two to twelve years, all except one having been treated in the home. All of these cases had been under his observation within the last five years. In all but three nephritis occurred as a complication of some acute infection. Five followed scarlet fever , five as a result of grippe, three an attack of tonsillitis, one within a week after diphtheria, one after chickenpox, one in the course of a severe enterocolitis, one after measles, and one occurred in a child recovering from general furunculosis. In the other three there was no history of any preceding acute infection. He was not able to secure in any of these any evidence of suppuration in any part of the body. Two of these came to his office because of the dropsy. The other one he saw at the home, the mother calling him because she noticed a peculiar shortness of the breath. In this case he suspected a preexisting scarlet, but found no clinical proof. It was a reasonable inference that acute nephritis was usually induced as a result of some general infection. It seemed probable, therefore, that some toxine circulating in the blood acted as the exciting cause. Of the twenty-one patients, three had died; eighteen recovered; two died with uremic symptoms, and the other one apparently from heart failure.

The Importance of Pediatrics as a Special Study.—Dr. L. .E La Fetra of New York City said that there was an enormous mortality before the normal time of birth, due to miscarriages, prematernity and still-births. An investigation made in Philadelphia showed taht in 1911 there were 39,975 babies born and of these 2,131 or about 5 per cent. were still-born. There were also 559 premature births and in which the baby died, and there were during the same year 10,666 miscarriages. This meant that one out of every five of these pregnancies resulted in a miscarriage or a still-birth. Just think of the blasting of hopes, the discouragement of womanly effort these figures implied! Something must be done to prevent this enormous loss of life before its portals were fully enterede. Secondly, they had a very large mortality during the first few days and weeks of life. The health officer of Washington had stated that in tion and, consequently, no safeguards to protect them from contagious epidemic diseases. Those few schools that had inspection, or examination, had no regular plan in and way of 1911, out of 957 deaths in the first years of life 151 occurred on the first day, 130 between the first and seventh days, and 114 between the seventh and thirty-first days; that is, 395 or about 40 per cent of the deaths of the first year occurred during the first month and about 1-6 on the first day. These figures were not exceptional, for in 1910, out of 1,070 deaths 150 occurred on the first day, and in 1909, out of 1,042 deaths, 140 occurred on the first day. They could set down 1-6 of the mortality of the first year as occurring on the first day, and almost 1-3 of the first year mortality as occurring during the first week. This first week's mortality was not due to the milk or the manner of feeding, but to earlier acting causes, such as heredity weakness or disease, malformations, difficult or mismanaged childbirth and septic infection. Thirdly, they had a large mortality during the remainder of the first year. This was due to difficulties with nutrition and to infection, particularly to gastrointestinal and respiratory diseases. Along with this mortality there went a morbidity whose prevention was possible to a large degree

The Importance of Regulated Rest and Play to School Children.—Dr. James D. Love of Jacksonville, Florida, stated that every school child needed individual supervision and guidance in order that the nature and extent of rest and play might be adapted to the physical requirements and limitations of the child. Cooperation between the physician and trained amusement directors and physical instructors was essential in order that best results be secured. The physical director should be possessed of sufficient medical training to enable him to delegate to the individual child the form of play best suited to his physical development. In the average public school, which was supplied with a physical director, much more time was devoted to the vigorous and promising young athlete than to the child who was physically defective and, therefore, in great need of regulated exercise and rest. Physical training was too often given without consideration.

Medical Inspection of the Children in Rural Schools.—Dr. William M. Jones of Greensboro, North Carolina, stated that medical inspection was an established fact in most well organized city schools, the rural schools, as a rule, having no inspection of the communities. The predjudice and economic consideration and examination were more necessary to the rural school, and consequently more important than to the city school. City parents were more likely to notice defects in their own children and to have them corrected than were country parents. The reason for this was that the city parent had constantly before him on the streets, in parks and other places, large numbers of children and he was forced to see and note defects, whereas the country parent saw only his own children and those of one or more neighbors, and, consequently, did not have defects called to his attention as did the city parent. Medical inspection should consist of an inspection of the school buildings, grounds, privies, water supply and means of dispensing. The pupils were examined for eye, ear, nose, throat, teeth, skin and special defects. Cards were given informing the parent or guardian of the defect, ordering him to carry the child to the family physician for treatment and advice. The physician was to return the card, but the majority failed to do so and the cards were lost. However, a record was made of all children to whom cards were given, and when the school was revisited the following year these cases were inquired into, and, if necessary, a second card was given and the parent or guardian had the defect called more forcibly to his attention by a letter telling him of the danger and necessity for treatment. To impress on the children some idea of disease, its cause and prevention, lectures were delivered, illustrated with slides whenever possible. This made a permanent impression. Teach the child and he would teach his parent.

Milk and Its Relation to Infant Mortality.—Dr. Henry Enos Tuley of Louisville spoke of the great importance of the prevention of infant mortality, and said that while there were many causes of the heavy mortality among infants under five years of age his remarks were limited to the question of milk. He stated that breast milk was the ideal food for the infant, but for many unknown reasons this supply was too often a failure and there was much artificial feeding among the infants after the third month. He then told of the idea of certified milk and the milk commission as conceived by Dr. Henry L. Coit and which had been so practical and one of the most potent factors in the reduction of infant mortality, by providing a clean milk. The formation of infant welfare associations, which carried the gospel of clean milk and infant hygiene into the homes of the poor and ignorant, was pointed out as one of the ways to reduce infant mortality. Dr. Tuley stated that the medical profession was remiss in not taking a more active part in all social service movements and should help organize an association for the distribution of clean milk. The work of the nurse in the homes was also commended as a great help. The author stated that under no circumstances should swill be fed to dairy cattle, even if legislative enactment was necessary before the practice was stopped. He stated that recent investigations had pointed out a new menace, viz: the infection of cows' milk with the bacillus abortus, and that it had been advocated that certified milk, as well as market milk, be pasteurized or preferably boiled under official supervision. He brought out the fact that milk was a carrier of contagion and the possible rendering safe of market milk supply by pasteurization or sterilization, but that procedure should be under the supervision of municipal control and the consumer educated in the care of milk i nthe home. He stated that the flash process of pasteurization did not destroy any of the pathogenic bacteria but did destroy the lactic acid bacilli allowing the milk to decompose, such milk being unsafe for infant feeding. The author was unable to state the relative nutritive qualities of cooked and uncooked milk, but that the highest authorities disclaimed that there was any deleterious effect from heat. He was not ready to agree that certified milk should be heated to render it safe. In closing the author made an appeal for organization of those interested in child welfare work in each community and the gospel of clean milk and child hygiene into the homes of the poor in order to stem the tide of infant mortality and save those babies to society.

The Management of Carbohydrates in Infant Feeding.— Dr. L. W. Elias of Ashville spoke of the method of Dr. Clock of New York, which consisted in displacing the intestinal bacteria with lactic acid bacilli. An essential to success was that the genuine Bulgarian lactic acid bacilli should be used, since they passed through the stomach uninfluenced by the gastric juice. These were administered in a sugar solution in which they developed best. The entirely new feature about Dr. Clock's method was that the treatment was carried on without any change from the diet which the infant was an when taken ill. His success both in private and out-patient cases was nearly 100 per cent. This method was itueresting, aside from its phenominal percentage of cures, in that it eliminated the usual starvation of the first day or so. and this was in line with the latest ideas in treating typhoid cases. A treatment including feeding from the start should be evolved for summer diarrhea. In a very limited experience with this method last year Dr. Elias was led to believe that there were large possibilities in it. To see a feverish baby with frequent green stools containing mucus and blood. and, thirty-six hours later, to find the temperature down near normal and the stools in normal yellow, free of blood and mucus with the baby looking as if it were a healthy one. substituter since the last visit. was most striking and impressive.

RETROSPECT OF CURRENT PEDIATRIC LITERATURE

Diseases of the Alimentary System.

Under the Charge of

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Acute Irreducible Intussusception in a Child Aged Six Months: Resection; Recovery. Gerald S. Hughes, M.B., B.S. Lond., F.R.C.S. Eng., reports in The Lancet, September 28, 1912. The following case of intussusception in an infant aged six months seems worthy to be recorded, not so much on account of the rarity of such cases, but on account of the success attending the resection of 15 inches of the gut.

A male infant, aged six months, was admitted into the York County Hospital on April 29th, 1911, under my care. The mother gave a history that the child was taken ill at 10 a. m. on April 27th. At first he seemed to be suffering from diarrhœa and vomiting; the motions passed were loose and green. At 4 p. m. blood was seen for the first time in the motions and the child had a "convulsion." On the same evening the child had more of these "convulsions." During the early hours of the following morning the mother noticed a lump in the abdomen. Dr. S. H. Smith was consulted, who diagnosed that the child had an intussusception and sent the infant at once into the hospital.

On admission the child appeared to be very much collapsed. The pulse-rate was 120, and the temperature was 97 degrees F. A swelling could be felt across the upper part of the abdomen, and the rectum was found to contain blood. I operated immediately and found a large ileo-colic intussusception, which had extended half way down the descending colon. By careful manipulation it was found possible to reduce partly the intussusception, but it was impossible to reduce it completely, and consequently I excised the irreducible mass and performed an end-to-end anastomosis. The little patient stood the operation well, being on the operating table for 25 minutes. Very little shock was present after the operation, and almost immediately after being returned to his mother the child took the breast, and in a couple of days he was looking around and smiling, being discharged from the hospital on June 3rd. About 15 inches of gut had been excised together with the appendix. I have seen the child recently (14 months after the operation). He can run about and is in splendid health.

An irreducible intussusception in a child is a most formidable complication to have to deal with. One may excise the irreducible mass and make an artificial anus, but this procedure is almost always followed by inanition and the death of the child in a few days, even if it survives thus long. Putting stitches into the intussusception and replacing it in the abdomen, hoping that the invaginated part may subsequently slough off and be passed, is also a last resort, and is almost always fatal. In my opinion, excision and immediate end-to-end anastomosis is the only method which is likely to prove successful, although in an infant this is a desperate remedy, and will remain so until we can more effectually, than at present, combat the shock to which this disturbance of the abdominal contents gives rise. In the case which I have reported very little shock was present.

Note of a Case of Amœbic Dysentery of Three and a Half Years' Duration Rapidly Cured by Injections of Emetine Hydrochloride.— Fernand L. De Verteuil, M.D., Edin., M.R.C.S. Eng., L.R.C.P. Lond., reports in the London Lancet. The following case is of interest as showing the rapid, nay, immediate effect of emetine in a severe chronic case of amoebic dysentery.

The patient, a Frenchman, aged 44, first came to consult me on May 5th, 1913. He gave the following history. In October, 1909, he left France for Panama, where he was to represent an important French firm. Previous to this he had always enjoyed excellent health, and was a strong, powerfully built man. Two months after his arrival in Panama he suffered from a sharp attack of dysentery with passage of mucus and bloody stools. From January 1st, to April, 1910, he was constantly ill, suffering from fever and diarrhœa.

In April, 1913, the patient arrived in Vancouver. Shortly after his arrival here he had a subacute attack, and it was for this he came to consult me. He had an urgent and constant desire to go to stool; he was passing from 20 to 30 stools daily, the majority of which consisted of only a little mucus and blood, accompanied by a good deal of griping and tenesmus. There were pain and tenderness over the region of colon. He had a slight evening rise of temperature. He also suffered from external haemorrhoids, which had apparently been caused by the constant straining at stool. The patient appeared a complete nervous and physical wreck; he was thin and emaciated, with a muddy, icteric looking complexion prominent cheek bones with sunken eyeballs. Late in the evening of May 10th the patient received his first injection, consisting of 1-3 gr. of emetine hydrochloride dissolved in saline solution and enclosed in a glass ampoule (Burroughs and Wellcome). On the following day at noon he received a second injection. During the night of the 11th he had no call to stool; previously he had to get up seven or eight times during the night. On the 12th, 36 hours after the first injection, he received a third injection, and from that date there was a complete disappearance of all dysenteric symptoms. That day he had but one stool, which was quite normal in appearance. He subsequently received seven more injections as a matter of precaution. During the time he was receiving the emetine injections no other drug or treatment was used. The injection of the drug did not cause the slightest unpleasant sign or symptom.

A Case in which Round Worms Caused Symptoms Leading to a Diagnosis of Appendicitis. By D. Kelly, M.B. B.S., Hon., Surgeon to Mater Misericordiæ Hospital, North Sydney, reports in the Australian Medical Gazette, June 21, 1913. Joe F., aet. 5 years, was admitted to hospital on April 12th, 1913. His mother gave the following history:—

Five months ago he complained of severe pain in his belly, and was admitted to St. Thomas' Hospital, London, where a diagnosis of appendicitis was made, and an operation advised. The family having taken passages to Australia, did not wish an operation, and the boy, recovering, was, after a stay of a few weeks in hospital, brought out here.

He has complained of slight attacks off and on since, but none were of the severity of the present attack. His temperature on admission was 100 degrees, and pulse 106. He looked pale and ill, and was complaining of the pain in his belly. His tongue was coated, but moist, and he had vomited once. His bowels had been constipated for some time. Heart and lungs sound, urine normal. There was rigidity of the right rectus muscle, and he was very tender on pressure in the appendix area. An operation for the removeal of his appendix was decided on.

Operation.—On opening the abdomen, the appendix was easily found. It was slightly reddened, but there were no evidence of previous trouble. The appendix was removed. As the condition of the acute symptoms, further examination was made, and a coil of small intestine was found to have a peculiar whip-like feel about it. This was pulled out, and was seen to be intensely congested and inflamed, and with some flakes of lymph on it. Three or four round worms could be felt, and also seen to move in it. They occupied about eight inches of the bowel, and were lying lengthwise and all together. It did not seem wise to open the bowel and remove them, nor yet to crush them, as one could not say what symptoms might follow the crushing. Had the worms been near the caecum it would have been an easy matter to push them along and remove them at the appendix stump, but they were at least three feet away. The bowel was replaced, and the abdomen closed. Three days later, whilst still on a liquid diet, the patient was given 1 gr. of santonin and 6 gr. pulv. scam. co., followed in six hours by castor oil, and two round worms, each about ten inches long, were passed. Two days after this, santonin was again given, and two more worms were passed. Santonin was administered again on the sixth day, but there was no result.

The boy is now gaining in weight, and is quite rosy, and his mother says he has never looked so well in the last 18 months.

I have seen cases where the appendix, on removal, has been found full of thread worms, but I never before had the experience of feeling and seeing round worms in the small intestine.

Chronic Intestinal Stasis.—By W. Arbuthnot Lane, M.S. Long., F. R.C.S. Eng., Surgeon to Guy's Hospital. December 21st, 1912, The Lancet. I employ the term "chronic intestinal stasis" to indicate such an abnormal delay in the passage of the intestinal contents through a portion or portions of the gastro-intestinal tract as results in the absorption into the circulation of a greater quantity of toxic or poisonous materials than can be treated effectually by the organs whose function it is to convert them into products as innocuous as possible to the tissues of the body.

The absorption from the secondary result of auto-intoxication may in some cases be very considerable, and the removal of the absorption from the secondary focus may result in great improvement in the patient's condition, though the source of absorption from the intestine be uninfluenced by its treatment. The primary absorption from the intestine varies in importance, not with the degree of stasis, but rather with the unfitness of that portion of the bowel to deal with organism, &c., to which it is unaccustomed. For instance, solid material may remain in the sigmoid flexure or pelvic colon for a considerable time, and produce but a moderate amount of auto-intoxication. On the other hand, the infection of the contents consequent on a very moderate stasis in the small intestine may bring about a very severe condition of auto-intoxication, while at the same time the mechanical symptoms resulting from it are also much more conspicuous.

I wish particularly to call your attention to the situation of the sites of the sources of excessive absorption of toxins from the gastro-intestinal tract. Since the profession has begun to study the subject of auto-intoxication in chronic intestinal stasis it has been inclined to assume that the large bowel is the sole source from which these toxins are derived, and it has got into the habit of looking on stasis as merely colonic. In consequence of this, operations have been conceived chiefly with the object of facilitating the effluent in the colon, and in this manner the chief site of absorption has been overlooked and left untreated. This is largely due to Metchnikoff's views on the subject. He considers that if we had no large bowel we would live longer. This is perfectly true, as evidenced by the fact that the removal of the large bowel results in a marvellous improvement in the health and appearance of the individual and in the duration of life. But I would point out that the benefit which results from the removal of the large bowel does not show that the colon is the chief source from which toxins are absorbed in excess. Indeed, in a considerable proportion of cases I believe the bulk of the absorption takes place from the small intestine, and that the control of the effluent in the ileum is the fatal product of civilization.

Stasis of the small intestine with the associated infection of its contents by organism to which it is unaccustomed is not primary but is secondary to a stasis in the large bowel. In other words, if it were not for the presence of the large bowel the conditions producing stasis in the small intestine would not arise. If the cæcum did not become overloaded, the obstruction to the ileal effluent, either by an acquired mesentery, an appendix hitching it up, or by simple stasis, would not develop. Consequently the contents of the small intestine would not become infected by organism, the duodenum would not be blocked by the drag of the small intestines obstructed at the end of the ileum, the mucous membrane of the duodenum would not inflame and ulcerate, the biliary and pancreatic ducts would not be infected, and the obstructed outflow from the stomach with all its associated sequelae would not occur.

Orthopedic Surgery

Under the Charge of

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Assisted by

A. BRUCE GILL, M. D.

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Implantation of Joints.—By Eloesser, Cal State Jour. of Med., Dec., 1913. The author refers to the work of Lexer, Kuttner, and Goebell who have successfully transplanted joints from the cadaver or from ampuated limbs to living human patients. He then reports two cases that he himself has operated upon. His first patient was a man who had a useless foot as the result of a crushing injury. Eloesser secured from a cadaver, 12 hours dead, an ankle joint including the astragalus and about three inches of the tibia and the fibula. He placed it in Ringer's solution and kept it on ice. A Wasserman test was made from some of the blood of the cadiver and a culture in broth of the bone marrow. Both were negative. The anklylosed ankle of the patient was then resected. The cadaveric joint was found to be much too large and required to be cut down. It was dropped on the floor while being handled and was then held in an alcohol flame to be sterilized. A space was gauged out of the oscalcis of the patient to receive the graft. The wound suppurated, the patient suffered pain in the sole of his foot and although the new joint was still movable the limb was amputated seven weeks after the implantation. The graft was found to be firmly united to the tibia and the fibula.

In the second case an ankylosed phalango-metatarsal joint was resected and one from a cadaver implanted in its place. The result has been successful, as the graft became firmly united in its position and the joint is freely movable.

The author concludes that: (1) Implantation of joints is feasible and useful. (2) Much of the implanted bone becomes necrotic but it remains in place, is absorbed, and is replaced by new bone. (3) A small part of the implanted bone remains alive. (4) The implanted periosteum and endosteum is probably the source of the new bone. (5) A subsequent arthritis deformans does not seem to develop in the new joint. (6) The fresh cadaver is the most practicable source of material. The cadaver should be that of a patient who died from a non-infectious disease and it should be proven to be noninfective by bacteriological and serological tests.

Flat-Feet and What They Lead To.—By McHenry, New Orleans Med., and Surg., Jour., Jan., 1914. In flat foot the longitudinal arch is depressed, the anterior transverse arch is also flattened and the foot is pronated. The ligaments of the joints of the foot are stretched and there is excessive pain in the whole foot. As the anterior arch becomes broken down, metatarsalgia, or Morton's toe results. As the foot becomes pronated the leg is rotated outward. This outward rotation of the leg stretches the internal capsule of the knee and increases the pressure of the tibia upon the external condyle. Therefore there is pain on the inside of the knee and occasionally on the outside also. The patient bends the knee and assumes a position of genu valgum.

Since the whole leg is rotated outward the femoral head is thrown forward and the weight bearing point is moved forward to the anterior portion of the acetabulum. The patient wearies of holding the body in a bad position and allows the pelvis to sag backward. The normal lordosis of the spine disappears, the shoulders and chest drop forward, and strain is thrown upon the lumbar and lumbo-sacral spine. The entire body is thus thrown into a very bad position. The abdominal viscera drop down as a result of the mal-position of the body and all the evils of visceroptosis result.

Such patients often come to the physician complaining of back ache, constipation, nervous irritability, and not at all of their feet. They have often been treated for rheumatism.

The feet of these patients must first be put into good position by one or more of the various well-known orthopedic measures. At the same time the spine must be treated by corrective exercises and possibly by support of adhesive straps or brace.

Heliotherapy with Special Reference to the Work of Dr. Rollier at Leysin.—By Dietrich. Jour. A. M. A., Dec. 20, 1913. Heliotherapy is based upon certain physical facts regarding the effects of sunlight upon the body and upon the valuable clinical observations of Finsen, Bonnet, Ollier, Bernhard, Rollier, Bardenhaurer and others. Sunlight is bactiricidal to many microoganisms including the tubercle bacillus. All light rays penetrate the human body to varying distances, but the longer rays, or heat rays, penetrate the farthest. Probably some rays penetrate to a depth of 5 to 6 cm. The chemical rays of the sunlight are all absorbed by the blood and must give to it an enormous amount of energy when the body is exposed to the sun's rays. The ultra violet rays produce pigmentation of the skin. Rollier states that the pigmentation of the skin is directly proportionate to the rapidity of the cure of the patient. Exposure of the human body to direct sunlight causes (1) increased pigmentation, (2) increased growth of hair, (3) increased metabolism, (4) increase in number of erythrocytes, (5) local hyperemia, (6) decrease in number of respirations, (7) increase in depth of each respiration, (8) fall of blood-pressure, and (9) stimulation of nervous system.

Heliotherapy has been employed in the treatment of wounds, burns, chronic ulcers, and carcinoma of the skin, but it finds its greatest value in the treatment of so-called "surgical" tuberculosis. Rollier after nine years of labor in this field states that the cure of surgical tuberculosis in all its forms, in all stages, and in every age of life can be accomplished. He has three sanatoria at Leysin in the Alps at an altitude of 3600 feet, with accommodations for 450 patients. The high altitude permits of this treatment all the year round as there is more heat from the sun at a high altitude than at a low one. Accordingly the patients at Leysin do not suffer from cold even when there is snow upon the ground.

When the patients arrive at Leysin they are kept in bed in the house for a few days until they become acclimated to the altitude. At the end of this time they are placed in the sunshine, and the feet are exposed for 5 minutes three times a day. The amount of the body exposed and the length of time of the exposure are gradually increased from day to day to produce pigmentation without burning the skin. Finally the patient receives a full sun bath from three to five hours daily. Each patient is treated individually, however, and all untoward effects such as burning of the skin, headache, and nervousness are avoided.

Local orthopedic treatment of the condition is also faithfully carried out, but the apparatus is all so far as possible removable so that it may be taken off during the exposure of the patient to the sunlight. If a plaster jacket must be worn in cases of spondylitis, large fenestra are cut in it.

Abscesses should not be allowed to rupture spontaneously, as the resulting mixed infection delays the healing a long time. Aspiration should be employed to empty these abscesses if necessary, although in many cases they will be absorbed spontaneously.

While this method of treatment requires months and even years to effect a cure yet, it does not require longer time than the usual orthopedic measures and it gives much better functional results. Many times a tuberculous joint will heal with almost complete restoration of normal function of the joint although neither active nor passive motion is employed during the process of healing.

Rollier's results have attracted attention all over the world, and such men as Bardenhaurer, Von Eiselsberg, Eischerich and Kocher have written with enthusiasm concerning the work at Leysin.

Many localities in this country offer every requirement for this method of treatment. such as Colorado, Arizona, New Mexico, and many other states. These methods of treatment may be employed in low altitudes also, but the course of treatment may have to suffer interruption on account of lack of sunshine all the time and on account of the cold.

Early Symptoms of Poliomyelitis with Special Reference to a New Preparalytic Symptom.—By Colliver. Cal. State Jour. of Med., Nov., 1913. The term "infantile paralysis" is a misnomer as this disease is not confined to infants, but attacks adults at times, and as it is not always characterized by paralysis. Neither is the disease always an anterior poliomyelitis as the posterior horn and indeed the whole cerebro-spinal system is subject to attack. Furthermore, it is not a nervous disease, but an infectious disease.

The various forms of the disease are based upon the part of the cerebro-spinal system that is chiefly involved; the cerebral, the bulbar, superior and inferior, and the spinal. In addition there is the abortive type, and Wickman adds the polyneuritic and the meningitic types.

The constitutional symptoms are those of almost any infectious disease and are in nowise diagnostic. The nervous system simulates a meningitis: irritability, hyperesthesia, abnormalities of the reflexes, stiffness of back and neck, localized sweating, pain, lack of co-ordination. These systems also will not diagnose the case. A lumbar puncture may in the diagnosis, but diagnosis is usually impossible without the paralysis.

The author calls attention to a preparalytic symptom which he has observed and of which he can find no mention in the literature. The symptom is a peculiar twitching or tremulous or convulsive movement of certain groups of muscles lasting from a few seconds to less than a minute. It usually affects a part or the whole of one limb or of the face or jaw, but it may affect the entire body. At first it lasts only about a second and recurs about once an hour, but gradually grows longer and more frequent. This phenomenon resembles the condition found in strychnine poisoning only the contractions are not so long nor so general. The author thinks this condition due to the irritant action of the virus of the disease upon the various centers of the spinal cord.

Vicious Union in the Neighborhood of Joints—By James K. Young. Am., Jour. of Surg., Jan., 1914. These cases usually come to the orthopedic surgeon after the union is firm with marked deformity. The following various forms of vicious union and related deformities are noted: (1) sprain-fracture, (2) separation of the epiplysis, (3) fracture in the vicinity of, or within the joint, (4) fracture complicated with dislocation, (5) vicious union in the vicinity of the joint, and (6) ununited fracture in the vicinity of the joint.

No set rules can be given to govern the treatment of these cases, and often the ingenuity of the surgeon will be taxed to effect a cure of the deformity. Separation of the epiphysis should always be suspected in a young person who has sustained an injury of the bone in the neighborhood of a joint, and it should be treated at once, if present, in order to prevent deformity. Fracture dislocations are often difficult to reduce. Operation may be necessary to remove the portion of bone lying loose in the joints or to cut off callus that interferes with normal motion of the joint. Even arthroplasty may be necessary where there is ankylosis of the joint. The treatment of ununited fracture depends upon the nature of the deformity and the time since the injury.

Infectious Diseases.

Under the Charge of

ST. GEO. T. GRINNAN, M. D.

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Portals of Tuberculous Infection in Children in the First Year of Life.—By O. Medin (Arch. f. Kinderheilk, Bazinsky Festschrift, p. 482). Seven thousand, six hundred thirty children died in the first year of life at the Children's Infirmary in Stockholm from 1842 to 1911 inclusive. An autopsy was held in nearly every case. Of these 623 were found to have tuberculosis, though the disease was not necessarily the cause of death.

In 287 cases the lungs or bronchial glands separately or in combination were affected, and in only six the intestines or mesenteric glands. There was not a single instance of congenital infection or of primary infection by the skin, mucosae, or larynx. During the past eighteen years no case of primary tuberculosis of the intestine or mesenteric gland was observed, and in thirty years' practice Medin has never seen a case of infantile tuberculosis due to cow's milk.

The Initial Localization of Pulmonary Tuberculosis in the Child.—By C. Leraux (Arch. de Med. des Enf., 1913, XVI, p. 641). Leroux describes some cases of tuberculosis in children and finds as follows: (1) The base or middle part of the lungs is in the majority of cases the primary seat of inoculation in infants and young children; (2)

a clinical examination is insufficient to reveal this condition, and it is necessary to use raidography; (3) The newly-born resist tuberculosis badly; (4) by radiography carried on for years it is possible to follow the evolution of glandulo-pulmonary tuberculosis, which shows three stages; (a) pulmonary infection of some part of the lung and unilateral adenopathy; (b) tracheo-bronchial adenopathy, more or less latent; (c) reinfection of the apex and evolution of chronic pulmonary disease; (5) infection starts at the apex and the adenopathy is secondary in older children; (6) in many cases the adenopathy is primary and the apex is affected secondarily.

Should Tuberculosis Mothers Suckle Their Children?—By O. Cozzolino (Arch. of Kinderheilk. Bazincky Festschrift, 1913, p. 221).

D. Cozzolino asks and answers the following questions: (1) Does the tubercule bacillus pass into the milk of a tuberculous mother? All authors save V. Behring answer this question in the negative except in rare instances. (2) Are the toxins of the tubercle bacilli excreted by the milk? This can occur, but the amount is so small that evil consequences can rarely result. (3) What influence does suckling exercise on the mother? An existing tuberculosis is made worse, and a latent tuberculosis is often set aflame.—New York Post Graduate.

Physical Condition of Retarded School Children.—S. Josephine Baker, Med. Rec., made this study, and for the purpose twelve schools in four of the boroughs of New York were selected, on the basis of the average school, without a preponderating attendance of children of any one nationality. A number of tables are presented and the author goes on to say that the relatively small number of retarded children who were physically normal with the exception of defective teeth, offers an interesting field for study as to the significance of dental defects in relation to retardation. The comparison of the various types found is significant. Malnutrition, found in 2.9 per cent. of all school children was found in 36.1 per cent. of the retarded children; anemia in twenty-three per cent. of the cases. Although the examination for defective vision was made more thoroughly than has proved practicable in the routine examination of school children, the marked difference—34.7 per cent. in the retarded children, compared with 9.3 per cent. in the children as a whole—would appear to be not wholly due to the greater care taken in this instance, but rather should be considered as a definite cause of the retardation, and, therefore, a predominant symptom in children selected because of inability to progress in their studies. The striking contrast between 20.4 per cent. of instances of defective nasal breathing in the retarded children, and 7.6 per cent. in the regular group, is more marked than that of the respective occurrence of 19.2 per cent. and 10.4 per cent. of hypertrophied tonsils. Defective hearing, in three per cent. of the cases, is an obvious cause of retardation. (This is found in only 0.5 per cent. of the children at large.) Pulmonary disease, with the ratio of three per cent. to 0.1 per cent., and cardiac disease, in the contrasting occurrence of 2.3 per cent. in the retarded and .05 per cent in the children at large, follow the general ratio of the other serious defects. The one exception noted is the relative importance of defective teeth.

The Intestine As a Pathway of Tuberculous Infection.—Leonard Findlay, New York Medical Journal, by feeding rabbits with tubercule bacilli enclosed in capsules, has obtained results which, he feels, warrants the following conclusions: 1. Healthy rabbits can be infected by the ingestion of large amounts of bovine tubercle bacilli. 2. The bacilli can pass through the apparently intact intestinal mucous membrane and reach the mesenteric glands within a period of six days; this, however, does not frequently happen. 3. When infection occurs the intestine invariably is the seat of lesions, and thus tuberculosis of any organ, other than the intestine, is always a secondary infection when the bacilli have entered by the intestinal route. 4. Catarrh of the intestine does not favor the passage of the tubercle bacillus through the wall, but allows of a more constant, and also of an earlier and more widespread infection of the bowel, and in this way facilitates dissemination. 5. Healthy rabbits apparently cannot be infected by the ingestion of large amounts of human tubercle bacillus. 6. Rabbits just recovered from intestinal catarrh manifest tuberculosis after the ingestion of human tubercle bacilli. 7. With the human type of organism a local lesion, though always present, may be slight in comparison with the disease foci in the mesenteric glands. 8. It would seem that the best means of combating the spread of bovine infection in childhood—until tuberculosis of cattle is eradicated—is in the avoidance of everything likely to cause intestinal catarrh.

Open Air Schools for Tuberculous Children.—To those who are interested in this burning public question, and there are many in every town and city in the nation, we most heartily recommend a paper on this subject with most excellent illustrations and suggestions in the New York Medical Record for November 15, 1913. The author is Mr. John V. Van Pelt, a skilled architect. In the paper which he read before the Fourth International Congress for School Hygiene at Buffalo, last August, he has given many directions of great value for a permanent school of this sort to be built of cement, and so planned from the beginning that various wings can be added from time to time as demanded. We commend the paper most heartily to all who believe that it is time that some place in Maine made a beginning in this method of teaching cure and prevention.

Diphtheria Carriers.—Since diphtheria antitoxin has come into general use quarantine of diphtheria is irksome, says W. A. Womer, New Castle, Pa. (Journal A. M. A., December 27). The patient is quickly cured by the use of antitoxin, but the fact remains that the diphtheria organisms may still be found in the throat and the patient be dangerous to others. It is impossible to tell in ordinary cultures whether the bacilli are virulent or not, and quarantine has to be continued sometimes for an inconveniently long period till the cultures become negative. He notices the literature on diphtheria carriers and gives the result of his experience in the use of staphylococcus spray in lessening the period of quarantine in winter of 1912 and 1913. The spray consisted of a boullion culture of S. aureus at least twelve hours old, or a fresh suspension in salt solution. It was prepared in the municipal laboratory and delivered personally to the attending physician or nurse with explicit directions as to its use. Only one strain was used; the directions were to spray copiously both nose and throat three times a day and not use any other treatment. A summary of the results is given and the following conclusions end the paper: 1. The use of the spray caused no unpleasant symptoms. 2. The use of the spray did not appreciably lessen the period of quarantine. 3. The preparation and distribution entails a large amount of work if there are many cases. 4. Apparently most of the carriers do not spread the disease after sixty days from the day the disease begins. 5. Public health officials could work more effectively if they had some practical method of determining the virulence of diphtheria bacilli found in the throats of carriers.

Tuberculosis Acquired Through Ritual Circumcision.—In the case reported by E. L. Holt (Jour. A. M. A., lxi, 99) a healthy child, born of healthy parents, breast-fed, developed local symptoms of infection within a few days after the operation and these persisted, being followed after a few weeks by symptoms of general infection which continued until death. The lesions found at necropsy point strongly to a spreading of the infection through the lymphatic system beginning from the wound, and afterwards to a general blood infection. At death, which occurred when the child was three and one-half months old, practically every organ in the body was involved. Specially worthy of note in the lesions are tuberculous nodules of the iliac artery and of the myocardium, also tuberculides of the skin. The writer gives a brief summary of forty cases found in the literature. Of the forty-one patients, sixteen are known to have died; seven are reported as having partially recovered or being scrofulous; in twelve the final results were not given; and only six are stated in the histories to have recovered. In several instances death has occurred as late as 11 months from tuberculous meningitis. The usual cause of death has been general tuberculosis. In many of the reports several children have been infected by a single operation. As a rule the earliest symptoms of infection have been observed in about a week after the operation. The wound does not heal, but suppuration occurs and ulceration soon follows. The early ulcer may be anywhere on the prepuce but is often on the frenum. It may remain as a localized process or be general. At the end of a second or third week inguinal adenitis develops. In a very considerable number of cases it is reported that the lymphnodes broke down and abcesses formed, usually in two or three months after the initial infection. The cases in which early suppuration of the inguinal lymph-nodes took place and which were operated on, either by removal or curetting, were among those in which the results were the best. The symptoms of a wide-spread general infection rarely occurred earlier than the third or fourth month. In a very large proportion of the cases reported the first diagnosis made was syphilis. The writer believes that syphilis is less frequently acquired in this manner than is tuberculosis and that the latter disease should be first suspected.

Serum and Vaccine Therapy and Their Application to Diseases of Children.—David N. Nabarro describes the difference between serums and vaccines, their advantages and disadvantages, briefly the way in which they are prepared, and the indications for their use. To get the best results from vaccine treatment, "1. You must use the correct vaccine. You must have made your bacteriological diagnosis in the first place; in the case of urines, periodical examination should be made, in order to be quite sure that you have not cleared out the offending organisms, and are trying to treat another organism with the original vaccine. 2. Then the associated conditions must be attended to. It is absolutely useless to try to treat a patient with vaccine, and leave all other points unattended to. Matters of general hygiene, good feeding, attention to the bowels, fresh air, and so on, are requisite adjuncts to vaccine, as indeed to all other forms of treatment. 3. Local conditions must be treated, surgically if necessary, when occasion arises. For example, collections of pus must be evacuated for the purpose of relieving the local positive pressure, which may be preventing the advent to the infected area of the antibodies which are being formed elsewhere in the body. A large collection of pus with a positive pressure inside will prevent the antibodies from reaching the region where they are most required. In diphtheria the local lesion must be treated by a germicide to kill the bacilli and so prevent more toxin from being absorbed into the system. A stone in the bladder or in the kidney will often give rise to a bacilluria. It is obviously useless to treat such a bacilluria with a vaccine while the stone is still present. 4. The proper dose and the proper intervals between the injections must be attended to, and regulated by the reaction produced."—Practitioner, December, 1913.

Diseases of the Respiratory System

Under Charge of
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Scorbutus in Young Children.—C. Hart (Centralblatt fur die Grenzgebiete der Med. und Chirurgie, Jena, September 8, Vol. XVII) has found only fifty-one articles on this subject in recent years. He summarizes them and reports anatomic research and experiments on monkeys which have confirmed the identity of scorbutus in both infants and adults. The bone changes are identical but he warns that the diagnosis may be difficult when the classic symptoms are absent: bleedings in the gums, pains in movements and swelling of the joint ends of the bones, generally in the leg, while the joints themselves are spared. Differentiation is scarcely possible when this classic triad is not pronounced or scarcely developed. Exophthalmos may be the only symptom for a time of infantile scorbutus; Habs had a case of this kind which he was unable to explain until the eyelids became discolored, like a "black eye." Small linear hemorrhages in the upper lid were evident in Hart's experiments on monkeys.

The sudden appearance of the swelling of bones is often a clue to the diagnosis. Special emphasis is laid on the warning never to incise one of these swellings; they retrogress soon and do not need incising, while the danger of infecting the subperiosteal hematoma is great. The hematoma may be very large; in one of Hart's monkeys the entire skull was capped by a subperiosteal hematoma. Hematuria may be the early and only sign of a hemophilic tendency, and it may occur with or without actual nephritis. Finkelstein has reported a case of fatal hemorrhagic nephritis in two brothers fed exclusively on sterilized milk, and he explained the clinical picture as a manifestation of infantile scorbutus. The sensitiveness of the bones is an early sign of true scorbutus in young children; they draw up the legs on the abdomen at the lightest touch. The prompt subsidence of the fever when raw milk is given confirms anew the importance of dietic treatment. Anatomic restitution is a very slow process, and cases are known of the return of the symptoms of scorbutus. Finkelstein has reported recurrence after thirteen months of apparent recovery.

Prophylaxis is the main point, avoiding artificial and highly sterilized food for young infants from the very first. If they are absolutely necessary, the period of their use should be restricted to the minimum.

Diabetes in Early Infancy.—In connection with the report of an instance of diabetes mellitus in early infancy, Knox presents briefly other cases of the same disease occurring during the first year of life. The urinary findings are usually incomplete, but a consideration of all the symptoms given warrants the probable diagnosis of diabetes mellitus in the cases of fifteen additional babies under one year reported from 1852 to the present. The majority of these cases were males. Knox found that heredity seems to have played but little part. Continuous over-feeding of sugar preceded the onset in three cases. Injury to or alteration of the central nervous system was often associated with the beginning of the malady. The more common symptoms were increased thirst, loss of weight, polyuria and glycosuria; acidosis and coma occasionally ended the scene. Knox regards the prognosis as grave, but not hopeless, even in infancy, except in a severe grade of the disease. He insists that treatment should be begun early, and, although more difficult in carrying out, should follow the lines found most successful in the treatment of diabetes in adults, i. e., the patient's carbohydrate tolerance should be determined and the sugar content of the diet (milk mixture) correspondingly reduced, the calorific requirements being furnished by fats and proteids. An "oatmeal day" or days should be given at frequent intervals.—Bulletin Johns Hopkins Hospital, Baltimore, September, Vol. XXIV, No. 271.

Caustic Effect of Silver Used as a Prophylactic.—C. Crede-Horder (Monatschrift fur Geburtshulfe und Gynakologie, Berlin, September, XXXVIII) concludes from a series of histological examinations of material from the eyes of dogs and new-born infants that no harm is done by the use of silver preparations as a prophylactic for opthalmia neonatorum; the conjunctiva alone was affected and that only in a transitory manner. The cornea was not affected at all. He used as high as five drops of a 1 per cent. silver nitrate solution, and also tested other silver preparations, but they seemed to have less effect than the nitrate. He asked a number of directors of obstetrical and infants' clinics if they had ever seen any permanent injury from the use of silver nitrate, and the answer was always negative. Illustrations are given showing his histological findings.

Exaggerated Fear of Anaphylaxis in Serotherapy.—A Gu ita (Semana Medica, Buenos Aires, August 21, Vol. XX) relates a number of instances in which the parents refused to permit the use of antitoxin in diphtheria for fear of anaphylaxis as the child had been injected with antitoxin on some previous occasion. He states that in all his experience and in that of Penna at the contagious disease hospital, Cabrera's at the diphtheria pavillion in the children's hospital, and of others he cites, no instance of anaphylaxis has been encountered, although some of the patients had received several injections of antitoxin. He declares that this dread of anaphylaxis is irrational and extremely dangerous. Even at the worst, anaphylaxis is comparatively harmless while diphtheria is a dangerous enemy. In conclusion, he relates a few examples of fulminating diphtheria, calling on every one to cherish a wholesome dread of this treacherous disease and abandon their fear of the anaphylaxis scarecrow.

Tetanus Neonatorum With Recovery.—G. Wolff (Deutsche Medicinische Wochenschrift, Berlin, September 11, Vol. XXXIX) details the case of a child who developed tetanus when it was nine days old and who was benefitted by the use of serotherapy and large doses of chloral with complete recovery. On the first day the antitoxin was injected in the vicinity of the umbilicus, the second day subcutaneously and on the third day half intramuscularly and half subcutaneously, the total dosage being 300 units. The chloral was given as a daily dose per rectum (0.4 gm.). This proportion is larger than the maximum dose for adults, and one day this dose was given at each of the three feedings. Feeding was possible only through the stomach tube with the child under the profound influence of chloral. On the eighth day no chloral was administered and only 0.5 gm. of bromid, but the chloral had to be resorted to again on the ninth day, in order to feed the child. The dose was gradually reduced until on the eighteenth day only 0.25 gm. of chloral were administered and by the twenty-seventh day natural feeding was resumed and all drugs discontinued. The child made rapid recovery and seems to be normal. So rare is a recovery from tetanus neonatorum that Wolff thinks this method of treatment which protected the child from exhaustion due to the convulsions at the same time permitting adequate nourishment was instrumental in the cure.

BOOK REVIEWS

Therapeutics Materia Medica and Pharmacy. Including the special therapeutics of diseases and symptoms. the physiological and therapeutical actions of drugs. the modern materia medica, official and practical pharmacy, minute directions for prescription writing, also the antidotal and antagonistic treatment of poisoning by Sam'l O. L. Potter, A.M., M.D., M.R. C. P. Lond, formerly professor of the principles and practics of medicine in the Cooper Medical College of San Francisco; author of the "Quiz-Compends of Anatomy and Materia Medica," an index of comparative therapeutics: several articles in Foster's "Practical Therapeutics," and "Speech and its Defects;" late major and surgeon of volunteers, U. S. Army, twelfth edition, revised and enlarged. The price of this book is $5.00, net, Philadelphia, F Blakiston's Son & Co., 1012 Walnut Street, 1913.

That this work has reached its twelfth edition, is conclusive evidence of its appreciation by and of its value to the Medical profession. The author has successded in presenting in a single volume a work embracing the essentials of practical materia medica and therapeutics, treating each subject in as concise phraseology as possibly consistent with the lucid delineation of every important feature. The author also formulates minute and definite directions for the framing of prescriptions, thereby elucidating what would otherwise be a very difficult problem into an easy one.

The additions to the text in this edition number five hundred and thirty, thus making the book eighteen pages larger than before, and including new articles on Acidum Nitrosum, Alypin, Aterio-sclerosis, Arseno-benzol, Aspirin, Chromic Sulphate, Digitalone and other preparations of Digitalis, Enesol, Eugenol-acetamide, Fibrolysin, Guaiacose, Hydrargyrum Succinimide, Lactobacilline, Laxaphen, Laryngitis Edematous, Libradol, Medinal, Novaspirin, Novacaine, Pallagra, Pertussin, Phenol-phthalein, Sodium Nucleinate, Trypsogen, Uriform, Valyl, and Veracolate. The section on Serums and Vaccines has been re-written and enlarged, and some obsolete material has been deleted.

In dealing with the characteristics of an important drug, its physical properties and chemical constituents are first briefly enumerated, then its preparations are described in the official language of the Pharmacopea, usually somewhat abbreviated. Any important unofficial preparations are also noted, and all the compounds into which it enters are also mentioned. Following this the physiological action is next described. These are followed by a brief account of its antagonistics, antidotes and incompatibilities, if any, and a concise summary of its therapeutic application closes the article.

The second part of the book is devoted to pharmacy, and prescription writing deserves full consideration, and many standard formulae are given as samples of prescription of each kind for extemporaneous use.

The third part of the work is devoted to special therapeutics treated elaborately in an alphabetically arranged index to the treatment of diseases; every indication for the use of a drug is referred to its author, and to the most prominent articles are appended a few selected formulae to serve as guides to the young physician in prescribing. The appendix contains numerous tables, comprising diagnostic hints, Latin terms and phrases, formulae for hypodermic use, metric equivalents; also formulae of the most noted patent medicines. The index is the work of an artist, and, as has been said, "when well made is the best part of a good book" is true in this instance. Every title, synonym and other reference of importance is included; double and treble entries are made in many instances.

The author's statements are concise, exact, compact, and his diction faultless, no one, perhaps, in this country at least, excels him in the perspicuity of his condensations and the completeness of his work in respect to the many details involved in authorship.

The Practice of Medicine. A text-book for practitioners and students, with special reference to Diagnosis and treatment, by James Tyson, M.D., L.L.D., Emeritus professor of medicine in the University of Pennsylvania and formerly physician to the Hospital of the University; formerly physician to the Pennsylvania Hospital; late president of the College of Physicians of Philadelphia; member of the Association of American Physicians, etc., and M. Howard Fussell, M.D., Professor of Applied Therapeutics in the University of Pennsylvania and physician to the hospital of the University; Episcopal Hospital, St. Timothy's Hospital, Chestnut Hill Hospital; member of the Association of American Physicians; member of the College of Physicians of Philadelphia, etc., etc. Sixth edition, revised and re-written, handsome buckram binding, 1190 pages, price $5.50, Philadelphia, P. Blakiston's Son & Co., 1012 Walnut Street. 1914.

The demands for a revision of this practical work have come thick and fast, so that we now have the opportunity of revising the sixth edition of this stupendous work on the "Practice of Medicine." The most important changes in the present edition will be found in actual additions; the section on Infectious Diseases has been thoroughly revised, diseases of the blood have been brought up to date and the treatment of tuberculosis modernized.

The author has carefully condensed the subject matter, rewriting anew many subjects. The latest methods of diagnosis, as well as the more recent advances in therapeutics, have been introduced. In fact, nothing seems to have escaped the author's vigilant eye. This work not only represents the work of a practitioner of great experience, but of a careful culling of facts set forth in contemporary literature by one who understands the art of separating the true from the false.

In this revision we are pleased to note that the author wisely gives proper attention to the metric system. Typhoid fever embraces a description of inoculation and vaccination, and under syphilis the treponema pallidum of Schaudinn is described together with the Wassermann test and the use of neosolvarsan. Mercury is not abandoned, but on the contrary holds a very important place in treatment. Mediastinal disease is timely discussed. That portion relative to the disease of the heart and blood vessels is very complete and perhaps with good grace we might say that nothing important is omitted relative to the chest. The terms diabetes, mellitus and glucosuria are not used interchangeably in accordance with an impression in vogue in some quarters. The author speaks of true diabetes mellitus which some have seen fit to designate as pancreatic glycosuria. Furthermore, we find a consideration of glucosuria from disturbance of the pituitary body, from glucosuria due to disturbance of Cromaffin system, glucosuria resulting from nervous disturbances and alimentary glucosuria. It is absolutely necessary to draw a fine line in such conditions, otherwise there will be a false prognosis.

Few teachers in this country can claim a longer apprenticeship in the laboratory and at the bedside, none a more intimate acquaintance with students, since in one capacity or another he has been associated with the University of Pennsylvania and the Philabelphia hospital for nearly thirty years. Moreover, he entered medicine through the portal of pathology, a decided advantage to the writer of a text-book.

In closing this all too brief review we still predict that, as a text book on practice, there is none better written in the English language, and that it is destined to be the leading text-book in the Medical schools.

This is a book for the desk and not for the shelf. We have never examined a book with which we were more pleased, and to commend this volume is both a pleasure and a duty. To Dr. Tyson the profession are under many obligations. The publishers, who appreciate a good work, are to be commended for their business tact and rare sagacity for placing this work before the profession in a style worthy of its contents.

Therapeutics of the Gastro-Intestinal Tract. by Dr. Carl Wegele adapted and edited, with the additions of the diagnosis of the diseases of the esophagus; diagnosis of the diseases of the gastro-intestinal tract; duodenal tube and its uses; diseases of the pancreas, and x-ray examinations of the gastro-intestinal tract, by Maurice H. Gross, M.D., attending gastro-enterologist to the Har Moriah Hospital, with 52 illustrations in the text and two figures in colors on one plate in muslin binding, $3.00. New York, Rebman Company, Herald Square Building, 141-145 West 36th Street.

In presenting a translation of Dr. Wegele's work to the English speaking physicians the Editors have made extensive additions to the German text, particularly as an aid to diagnosis, and in this respect adding to the value of the work. Thus they state precise points of diagnostic interest in connection with each gastro-intestinal disease; they have added a separate chapter on the esophagus; also a chapter on x-ray diagnosis of stomach and intestinal diseases—a matter indispensable to present-day diagnosis. The x-ray work is from their own clinical experience There is a new chapter of twenty pages, mainly from their own researches on the new topic, the duodenal tube. (This is an elongated and weighted stomach tube which in the course of an hour is passed into the duodenum even to 250 cm., allowing examination of the contents, by suction, through the tube of the various materials along its course.

In this connection they have incorporated an important chapter on the diagnosis and treatment of diseases of the Pancreas, besides minor chapters on Parasitic Diseases of the Intestinal Blood-vessels. It is, however, disappointing that the work does not refer to Lane's work in "Intestinal Stasis and Intestinal Putrefaction" both of which are momentous questions just at this time.

History of Medicine, with Medical Chronology, Bibliographic Data and Test Questions, by Fielding H. Garrison, A.B., M.D., Principal Assistant Librarian, Surgeon General's Office, Washington, D. C.; Editor of the "Index Medicus," Octave of 763 pages, many portraits. W. B. Saunders Company, Philadelphia and London. 1913. Cloth, $6.00 net; half Morocco, $7.50 net.

This book presents the history of medicine from the earliest ancient and primitive times, on through Egyptian medicine, Sumerian and Oriental medicine, Greek medicine, the Byzantine period, the Mohammedan and Jewish periods, the Mediaeval period, the period of the Renaissance, the revival of learning and the Reformation; the Seventeenth Century, the age of individual scientific endeavor, the Eighteenth Century, the age of theories and systems, the Nineteenth Century, the beginning of organized advancement of science, the Twentieth Century, the beginning of organized preventive medicine.

Most all the important facts of Medical history are faithfully recorded; we note an exception, however, pertaining to the discovery of ether anesthesia by Crawford W. Long of Georgia, to whom undoubtedly belongs the honor and credit of the discovery of anesthesia (see symporin on ether anesthesia 4 authors Georgian Medical Association, 1899, published in Georgian Journal of Medicine and Surgery, July, 1899).

This volume is really a biographic dictionary of men who have "done things," it is an album of the portraits of Medical men; it reflects the social and cultured phases of the decades of passed medical history. There are to be found valuable appendices covering medical chronology, histories of diseases, histories of drugs and therapeutic procedures, histories of the great advances in surgery; new operations and biographical notes from collateral reading, and a series of questions of great value.

The illustrations are valuable, stimulating the reader's interest in the picturesque aspects of medicine and in the personalities of its great leaders. The biographical sketches record the most important facts and interesting personal traits. The original biographical references are cited. It is beyond question the most valuable work on the history of medicine it has been our pleasure to examine, and as such we heartily recommend it.

Chirurgie Infantile, by Professor Auguste Broca, member a la Faculte de Medicine de Paris, Chirurgen del'Hospital des Enfants-Malades, 1116 Octavo pages, 1259 illustrations, handsome buckram bindings, G. Steinheil, Editeur, 2 Rue Casimer-Delavigne, 2, Paris, France.

In Surgical Pediatrics, as in Medical, there are some disorders which are found at no other time of life, and others occur in adults as well as in children. When found in the latter they present a different Pathological phenomenon, and then a different course of treatment is required. The treatment of Adult Surgical Diseases of Infants and children is as distinct in their peculiarities as their medical disorders.

The author has produced a unique and most helpful book and has brought together in one large octavo volume subject matter which heretofore one has had to find after a search through current works, treatises of orthopeic surgery, general surgery, on diseases of the ear, on diseases of the throat, on diseases of the Uro-genital diseases, and on diseases of the nervous system; altogether, it contains more or less surgical information applicable to children rather from a standpoint of a specialty. Professor Broca presents all this information, together in one volume from a standpoint of the Pediatric Suregon.

Professor Broca's twenty years' active service in the pediatric wards of the Old Trousseau Hospital together with his didactic and clinical teaching has peculiarly fitted him to produce a work on the surgical diseases of children. He believes the first requisite of a good surgeon is a correct diagnosis and to this end he has laid particular stress upon this point, emphasizing it with illustrations and diagrams. He very wisely says one cannot possess great skill in surgical diagnosis without possessing precise information as to the morbid anatomy, pathology, etiology, and symptomatology of the malady under consideration. He also urges a working knowledge of laboratory technique.

The author in some instances replaces the text proper by synopsis explaining the illustrations of diseased conditions and particularly in part I are incorporated diagrams of the explorations of joints which the author prefers to radiograms, believing a correct drawing superior for teaching purposes.

Professor Broca is a believer in the value of therapeutics and where, in his opinion, remedies promise relief, he advocates this rather than operative procedure, he gives due acknowledgement wherever he mentions opinions of other authors, citing the source of information where it may be studied at length by those so inclined. The work contains bibliographic references by which the author hopes to enlighten seekers either after his own personal research or that of others.

The book gives evidence of a great deal of experience and common sense and impresses the student with its up-to-date illustrations of which there are 1,259, remarkably good, and is therefore worth much careful study to the general practitioner of the pediatrician and the general surgeon alike. Dr. Broca's most admirable work should prove to be exceedingly helpful.

PEDIATRICS

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EDITORIAL

RHEUMATIC HEART DISEASE IN CHILDREN.

A most important paper apeared recently in which Dr. David Lees, dealt with the above subject. After pointing out that disease of the heart among children is in the majority of instances due to rheumatism and after referring to the great mortality among children as compared with adults from this disease, he touches the question of dilatation, which he maintains is usually present in sub-acute first attacks, even when pyrexia is slight and arthritis not present. Fatal results were not due to effusion into the pericardium nor to endocarditis. These conditions seemed to affect the mortality very little, but plastic pericarditis and dilatation played a very important part in the fatal result. Osler thinks it important to guard against repeated attacks of rheumatism. Ewart contends that in dilatation, fluid was always present, and professor Bagińsky draws attention to the immense size of the heart in some of these cases of dilatation. In the Edinburg Medical Journal of a recent date Broadbent contributed an able article on rheumatism in children, in which he shows that in childhood and early adolescence rheumatism in its manifestations takes a different course from the same disease occurring in adults; in childhood and youth the articular manifestations are slight, but in spite of any marked symptoms the heart rarely escapes, and owing to the insidious nature of the inflammatory process irreparable damage may be done before the severity of the cardiac symptoms compels the patient to seek medical advice or take to his bed. According to Dr. Sturges it is exceptional for the victim of endocarditis to escape pericarditis, and eventually within from six weeks to three months one of three things will happen. (1) The area of cardiac dullness may increase until it is nearly normal in extent, indicating that the heart has approximately gained its normal size in which case a satisfactory recovery may be anticipated. (2) The area of cardiac dullness may remain permanently enlarged though the patient has become convalescent in which case it is probable that universal adherence of the pericardium to the heart is taking place, and though the patient recovers the heart will be permanently cripped. (3) The area of cardiac dullness may still further increase, the liver become enlarged and dropsy set in, and the patient die with all the symptoms of right ventricle failure. Dr. Broadbent remarks with regard to treatment of rheumatic affections of the heart in children, various local applications, such as ice bags, leeches, and blisters over the precardial area have been advocated, and according to Dr. Lees it is best to limit the amount of cardiac dilatation. Administration of salicylates is of doubtful benefit, and perhaps the most useful remedy is quinine and bicarbonate of potash. Nothing, however, does much good; it is therefore most important that any indications of danger threatening the heart should be early recognized and guarded against. When any symptom of coming heart trouble is detected, the first steps that should be taken is to prescribe absolute and continued rest in bed.

HEREDITARY MORPHINISM IN AN INFANT

This condition is fortunately so rarely met with in this country that it is regarded as an event which should be widely chronicled. In India, and, indeed, in most oriental lands the custom of taking opium in one form or another is so general that it may be said that the majority of the in habitants are more or less saturated with the drug, and as a natural sequence their progenoy are born with the taint. The prevalence of the opium habit among the children of India was referred to in a previous number of Pediatrics, when commenting on the results of the investigation of the British Opium Commission, and it was remarked that the members of this commission came to the conclusion that opium was not only beneficial, but even necessary to keep the native infants alive. However, as we have just said, morphinism in an infant in America is sufficiently uncommon to attract attention. Such a case has recently been reported in the Lancet Clinic. The mother had been in the habit of using morphine to allay pain at the menstrual period. She took about six grains a day, and in course of time was delivered of a well nourished baby of normal weight. Knowing that the babe had been receiving an indefinite amount of morphia through the placental circulation, the attending physician was doubtful whether to continue to give it in small quantities. It was decided to withhold it for a few days to see what would happen. This was done. On the first day the child manifested no special discomfort other than a dislike for the breast. On the morning of the second day it began to show symptoms due to withdrawal of its customary stimulant; it refused food, was irritable and fretful, and showed considerable tremor of the extremities. After unsuccessful attempts to quiet it, it was determined to try a hypodermic injection and accordingly a one-twentieth of a grain of morphine was administered. This had no other than a soothing effect. No other injection was given, but a small dose of morphine has been administered daily by the mouth. The child is now three years old, healthy, strong and of a bright intellect. This case is another proof that morphine may be transmitted directly from mother to offspring in utero, provided the fetus survived the period of gestation.

THE VALUE OF FRUIT JUICES FOR CHILDREN

While most fruits are composed largely of water, in some instances as much as 90 per cent., they still have a food value-largely of starch and sugar. The sugar most abundent in fruits is levulose or fruit-sugar, which is sweeter than other sugars, and is more easily digested and assimilated than cane-sugar. Fruit-sugar is a predigested food, which is readily assimilated into the blood and speedily becomes effective for nutritive purposes.

Fruits are rich in salts and acids. The salts of potash predominate, but salts of soda, lime, iron phosphorus, sulphur, magnesium manganese, etc., as well as sodium chlorid or common salt, are also found. Earthy salts are scarce; hence fruits can usually be given with impunity to those who suffer from degeneration of the blood-vessels. The pleasant, cooling, refreshing properties of fruits are largely due to the acids. Citric acid, one of the most common, as well as one of the most wholesome, is abundent in lemons, limes, citrons, oranges, and grape-fruit, Tartaric acid (in grapes) also produces cooling and refreshing effects.

Most fruits, when properly ripened and eaten under favorable conditions, including proper mastication, give little digestive trouble. Fruit-juices are most easily digested and assimilated, since their chief contents besides water are fruit-sugar salts and acids. Many persons invite digestive trouble by mixing fruit, particularly acid fruits, with milk foods, or by mixing fruits and vegetables. Fruit either fresh or stewed, always goes well with nuts, breadstuffs, and cereal preparations. It does not assist digestion to eat too large a variety of fruits or other foods at the same meal.

Most difficulties with the digestibility of fruit are due to eating it when unripe or overripe. It is poor economy to buy fruit which is ''gone'' or is ''going.'' Better pay a little more and get perfectly fresh, sound fruit, and avoid danger of colic or diarrhea.

Fruit should be eaten at meal-time with other food. Eating between meals or at irregular times, is apt to upset the digestive organs.

There is scarcely a drink more refreshing than freshly made lemonade. The larder should always contain lemons. Lemonade, taken freely, is excellent for those who are developing a cold in the head.

Orangeade and the juice of fresh grapes, cherries, blackberries, gooseberris, green gages, pineapples, and apples, make delicious drinks, which can be taken with impunity. Cold fruit drinks are most refreshing and cooling to fever patients. Such drinks are always acceptable, and they help lower the temperature and alleviate symptoms.

Non-alcoholic grape wines make a splendid tonic for children suffering from anemia, nervous debility, neurasthenia, and other disorders.

Nature's aperient consists of laxative fruit taken freely with meals. The more effective laxative fruits are figs, prunes grapes, raisins, currants, and dates. The ripe olive is also a very efficient laxative.

NEW YORK MILK COMMITTEE SAVES INFANT LIVES

According to the Seventh Annual Report of the New York Milk Committee, just issued, 41,000 baby lives have been saved in New York City by the systematic welfare work carried on during the last seven years by co-operating public and private agencies. During that time 950,000 babies have been born in

New York City. If the infant death rate of the five years previous to the beginning of this work had prevailed there would have been 150,000 infant deaths instead of the 109,000 which actually occurred. On the other hand, if New York's low deah rate of 1913, i.e., 101.9 per 1,000 births, had prevailed throughout the seven-year period, only 96,000 babies would have died out of the 950,000 born.

The committee points out that this record is not due to favorable weather conditions nor to other general accidental causes. Returns from the larger cities throughout the country, for 1913, published in tabular form in this report, show that while New York made a further reduction in 1913 in the actual number of deaths over its low record of 1912, Chicago, Philadelphia, Cleveland, St. Louis, Pittsburg, Detroit, Buffalo, New Orleans and Toledo, all show an increase.

The Milk Committee was organized as one of the pioneers in New York City's campaign. "The committee's activities, and the activities of all public and private agencies," says the report, "are now based upon a program calling for clean and safe milk and the systematic education of mothers in matters pertaining to feeding, hygiene and sanitation."

In its work for a better milk supply 1913 has been a year of signal achievements for the Committee. Its National Commission on Milk Standards, composed of seventeen experts from all parts of the country, completed its work of standardization and milk grading with such success that during the year its findings were endorsed by the American Public Health Association, the American Veterinary Medical Association and the International Milk Dealer's Association. "The deep significance of all this," says the report, "is that instead of a state of confusion and diversity of direction, this country and Canada will henceforth have the same objective points in local milk regulations because of a general agreement on a working program." This Commission's report has been used during the year as a basis of clean milk campaigns conducted by public and private agencies all over the country. Important changes have been brought about in New York City's regulations to make them conform closely to the National Commission's standards.

Another important step taken by the committee, during the year, was the calling together of representatives appointed by the governors of the eastern and middle states to discuss the question of uniform state regulation of the milk supply. As a result of this conference state control bills were introduced in several states. The bill prepared by the New York Milk Committee and introduced in the New York State Legislature, while defeated by a small margin, aroused so much public sentiment that it will be reintroduced this winter, with strong prospects of success.

The committee also held a conference to consider a method of fixing the market price of milk to the producer, which resulted in the formation of plans for a practical working agreement to this end.

Independent investigations have been carried on during the year by the committee dealing with: Hospital milk supply; transfer of milk on street; milk supplied at school lunches; short-measure milk bottles; icing of milk in transit, with special reference to broken car lots; prosecutions of dealers; and milk-born epidemics of typhoid fever in Manhattan and of septic sore throat in a section of the state in which is produced the milk supplied to the infant milk stations of New York City. Active measures for correcting the evils brought to light by these investigations are now under way.

In its work to save the lives of infants, by systematic education of mothers in matters pertaining to feeding, hygiene and sanitation, the Committee's most important achievement during the year was the completion of its comprehensive experiment in the prenatal education of 3,300 mothers. In this experiment the stillbirths and the deaths under one month were reduced approximately twenty-five per cent. (25 per cent.) This work was carried on by visiting nurses in the homes of the expectant mothers. This method of conducting the work has been adopted by the Department of Health of New York City, as a result of the New York Milk Committee's demonstration, and will form a part of the educational system of municipal milk stations hereafter.

The Committee also began a demonstration with a public Health Center which it believes will revolutionize methods of carrying on public health work in general, and infant welfare work in particular, in large cities. In this experiment the committee attempts to show: That public health work of a large city should be centered around local points in convenient districts; that the present infant milk station should have the scope of its work so expanded as to become that center; that it is impossible to deal with the infant welfare problem without taking into account the interests of the entire family and the community; that the so-called "milk station" as an educational center can be conducted successfully without the selling of milk in connection with its work. The Center established by the Milk Committee, as a demonstration, is located in the old Syrian quarter of Manhattan Island. It already has an enrollment of over 200 families. Doctors and nurses are in attendance every week-day and the Center has become a bureau of advice and help in all family perplexities in the district.

During the year the Milk Committee has given medical advice and attention at its centers to 8,088 mothers and babies. It has instructed mothers in their homes through 26,650 visits made by physicians and nurses. It has printed and distributed 300,000 educational circulars and 16,500 booklets and other educational matter.

The New York Committee held the first Better Babies Contest in New York City this last year and has co-operated with other agencies in twelve other contests.

PEDIATRICS

ORIGINAL ARTICLES

GENU VALGUM

BY C. B. SPALDING, M.D.
Louisville Ky.

The term genu valgum is utilized to denote the deformity commonly known as "knock-knee" which is observed in early childhood, the unfortunate victim thereof being not only a cripple but an object of pity, and not infrequently the subject of ridicule. If the deformity be not corrected during childhood, development continues along lines of least resistance ,aided and abetted by increasing weight and unequally balanced muscular power) and the afflicted individual usually becomes a hopeless physical cripple before reaching maturity.

Almost without exception the presence of genu valgum indicates that the child has been the subject of rachitis, the latter being primarily a disorder of nutrition usually attended by certain nervous manifestations. The disease is preventable but once having devoted its ravages are most apparent in the osseus system. It is more often than otherwise observed in children between the ages of six months and two years, especially among those reared in unhygienic surroundings, and there is oftentimes a history of syphilitic or tuberculous parentage; it is more common in negro than white children, and inquiry nearly always elicits a history of artificial feeding, or nursing by mothers with impaired general health. Deficiency in fats and albuminoids constitute the usual causative factors.

The essential local deformity in genu valum consists of an increased acuteness of the normally acute angle, formed by the plane of the articular surface of the condyles of the femur and the long axis of the bone. Nature has arranged this increased length of the internol condyle to offset the angle caused by the breadth of the pelvis, thus making it possible for a normal

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*Read before the Louisville Surgical Society, November 21, 1913.

individual, while the legs are extended, to keep the knees close together and at the same time maintain the ankles in contact. Any increase in this normally acute angle, causing the ankle to remain separated when the legs are extended with the knees touching each other, represents the deformity designated as genu valgum.

The physiological development of the femur is unique, in that (with the clavicle) it is the first long bone to show traces of ossification, i.e., beginning the fourth or fifth week of fetal life. While the center of ossification in the femoral epiphysis first appears during the ninth month of fetal life, strange to say the lower extremity of the femur is the last to join the shaft by ossification, i.e., not occurring until about the twentieth year. Therefore, there is normally a soft, unossified area which is susceptible to impressions from weight as well as position, and usually further weakened by deficient development the result of rachitis. It must be remembered that the normal chemical composition of adult bone consists of 33.3 per cent organic and 66.7 per cent. inorganic matter, whereas in the infant the organic matter predominates.

In the normal mechanical arrangement, the plane of the condyles is so approached by the shaft of the bone as to direct the greatest force along its axis to the inner condyle; the latter condyle is longer to comply with the direction of the tibia, and attached thereto is the adductor magnus nuscle which is far out of proportion in power to any muscle exerting an opposite effect upon the external condyle, the latter being influenced only by muscles extending downward over the knee joint to the tibia and fibula. There is also a tendency to increased softness at the epiphyseal junction, due to normally slow ossification of the epiphysis, and when coupled with the over-production of organic substance composing the bone at this age, especially if the child be the subject of rachitis, the leg is exceedingly prone to become distorted because of having to support the rapidly increasing weight of the body.

The older methods of treatment, by massage, braces, etc., in the attempted correction of bony deformities such as genu valgum, have been practically abandoned, because such methods were too severe even if they could be made uniformly effective; moreover, by the rational application of modern surgical principles, approach to the bone and subsequent mechanical operative treatment are now fraught with comparatively little danger, and substantial benefit may reasonably be expected to accrue therefrom.

The operative age is preferably after the sixth year, although the operation may be successfully performed at four years. In younger children, however, the deformity is prone to recur, as ossification is insufficient to insure a permanent result.

The operation of choice is osteotomy through a skin incision the width of the chisel blade and preferably performed upon the outer side of the bone, there being in that situtation less danger of hemorrhage resulting from trauma produced by passage of the chisel through the overlying structures.

The technic is comparatively simple, and consists in thorough preparation of the parts, then with scalpel incising the skin the width of the chisel blade, the incision being made over the bone just above the supracondylar ridge. The chisel is introduced into this wound, the edge of the blade being held parallel to the long axis of the femur until the bone is reached; it is then turned at right angles to the bone and the latter carefully notched throughout half its circumference; the chisel is then driven directly into the canal.

After removing the chisel and applying a light dressing over the wound, the leg is grasped with the hands on either side of the wound, and if the bone has been properly notched with the chisel it may be easily and evenly broken.

It is important to avoid reintroduction of the chisel, because it may be a dangerous source of infection; also avoid driving the chisel directly into the bone without previous notching, as its withdrawal may be difficult and it may be broken during the attempt.

It is the height of wisdom to over-correct the deformity, if necessary markedly "bowing" the contour of the femur, being certain to observe the correct line of direction from the anterior superior spinous process of the ilium through the knee to the internal malleolus.

Dress the leg with plaster of paris, immobilizing all the joints to the waist. The first dressing is permitted to remain intact five or six weeks, and if necessary is then replaced by a second similar dressing which is left on until end of eighth week. The patient is kept in bed a week or two longer, then gradually allowed to walk, crutches being used at first.

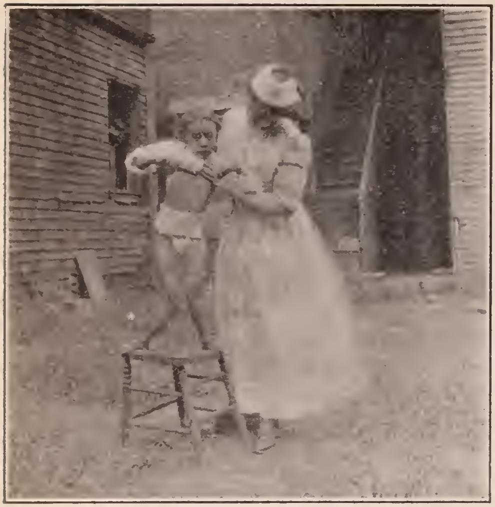
No braces are necessary when this plan of treatment is followed, and rarely will thickening or extension of the inner edges of the soles of the shoes be required.

Case. 1. A female of eight years with a history of rachitis, was markedly emaciated and presented the picture of extreme distress because of being the subject of continuous ridicule by other children on account of her deformity. This child had been previously operated upon by another surgeon, bilateral osteotomy being performed above the knees. When attempting to walk the body was maintained at an angle of about sixty degrees with hands on her knees. Bilateral osteotomy below the knees with application of plaster spica bandage. Dressing changed in four weeks, and discarded at end of seven weeks. There was no infection, and the child was able to walk perfectly well two weeks after removal of the final cast. This operation was performed five years ago, and the child is still in good condition. No braces of any character were used.

Case 2. A well-nourished female of seven years with a history of rachitis. Bilateral osteotomy above the knees with application of plaster spica which was allowed to remain intact five weeks, the child being permitted to walk as soon as the dressing was removed. Recovery was rapid, due to the good general physical condition of the child. Upon casual inspection one would not suspect that there had ever been any deformity.

Case 3. A female of eight gave the history of having been in an accident at the age of two years, the right knee being injured to such an extent that the attending physician thought it necessary to apply a plaster cast. The parents were under the impression that the child's leg was broken at that time. Shortly thereafter genu valgum was noted accompanied by a general enlargement of the right foot and leg. This patient had been under the treatment of several other physicians who had applied splints, braces, bandages,etc., without appreciable beneficial effect. X-ray examination revealed no disease of the bone, but there was a slight symmetrical bony enlargement as compared with the opposite leg. The entire right leg and foot presented an enlargement or overgrowth. Unilateral osteotomy obove the knee and plaster spica for six weeks followed by perfect recovery. The child is able to walk without difficulty, and her general condition is markedly improved.

Case 4. A male of seven years with a history of rachitis. In addition to genu valgum had marked distortion of tibral shafts. The shank of the bone turned almost directly backward



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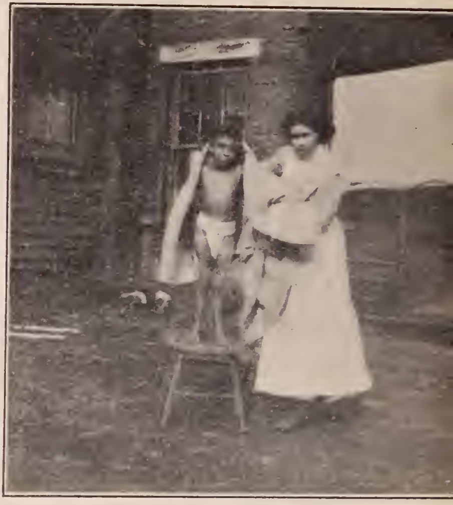

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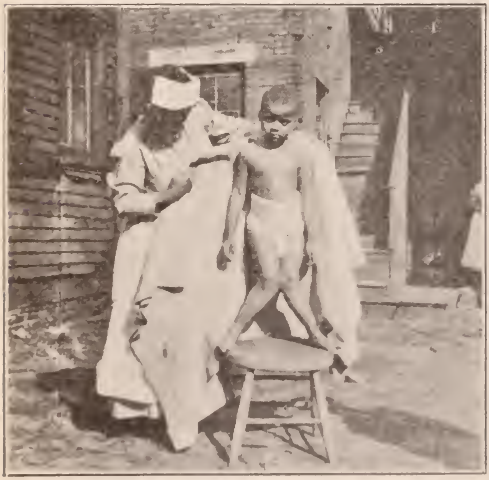

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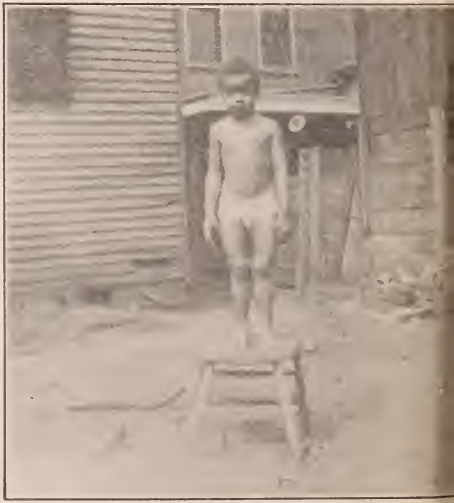

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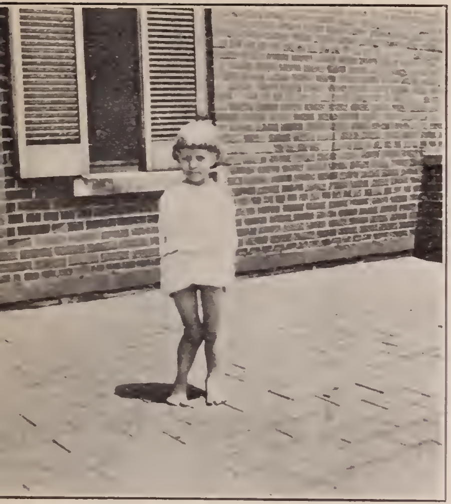

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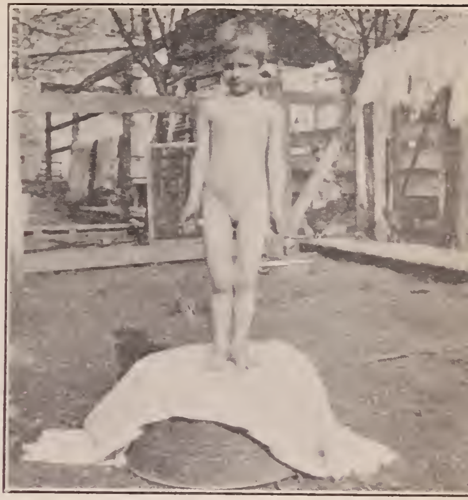

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with bowing of the tibiæ just above the ankles. There were several brothers and sisters in good health, but one sister (vide case five) had identically the same deformity. Bilateral osteotomy above the knees, plaster spica left intact seven weeks followed by complete recovery, with line of direction from spine of ilium through knee and internal malleolus normal. Nothing was done to correct the twisted tibiæ believing with the body weight on a straight line the deformity will be overcome.

Case 5. A female not quite four years old sister to case four and with similar deformity. In addition she had an umbilical hernia. Bilateral osteotomy above the knees, plaster spica seven weeks. After recovery line of direction from spine of ilium through knees and internal malleous normal. The deformity of the tibiæ will undoubtedly correct itself, since the weight of the body has been thrown on a direct line, without further operative treatment. While this patient was rather young to subject to this operation, I prefer them to be four years or older, as the deformity was so marked that she could scarcely walk, operation was deemed advisable, and if there was a tendency to recurrence of the deformity on account of the age of the patient, it was the intention to apply a brace for support. However, recovery was perfect and application of a brace was unnecessary.

Case 6. A female aged three and a half years gave the history of rachitis. She was extremely anemic and poorly nourished, the parents being very ignorant and exhibiting little willingness to assist in taking proper care of her. For that reason and fearing that the child might drift away and not again have the advantage of proper treatment, operation was considered advisable. There was an extreme right genu valgum, the left leg being normal. Unilateral osteotomy above the knee, plaster spica six weeks, at the end of which time the knee was in proper line with only slight shortening. Some orthopedic surgeons claim that if one leg and not the other be broken, there will occur sufficient shortening to markedly interfere with walking. The shortening in this case was not over one half inch, and in all other respects the result was perfect. This small amount of shortening will be readily overcome by the tilting of the pelvis.

The accompanying illustrations show the extent of the deformity and the operative result in each of the first three cases. In none of them did infection occur, and in only one was a second plaster dressing applied. There was a history of rachitis in five of the cases. In none of them was the application of a brace required after osteotomy.

HEART MASSAGE AS AN AID TO RESUSCITATION OF STILL-BORN INFANTS*

BY ROBT. E. LA RUE
Erie, Ill.

After carefully studying all available medical literature, and finding nothing relating to this subject, I decided to write this article descriptive of a method of heart massage I have used on several occasions with good results, hoping that it might be of value to some brother physician in time of need.

We occasionally have cases of asphyxia neonatorum in which vigorous methods of artificial respiration are necessary to save the lives of some newly-born infants; but in these cases the heart is still doing its duty, and we have only to induce the muscles of respiration to take up their work. The class of cases in which heart massage is of especial value are those in which the infant is pulseless and apparently dead when born, where any method of artificial respiration would be useless because the heart had ceased to beat.

*Published simultaneously in Medical World.

In a practice of twenty years I have had ten cases of this nature, in which the child was entirely without sign of life at birth. In nine of these cases this method of heart massage was used, with success in seven, the first happening about eighteen years ago, before this procedure had occurred to me. The two failing to respond to this method were both cases in which the umbilical cord was so short that the placenta was detached some time before the child was born, in one instance coming away firmly held between the infant's legs.

Before describing this method I will state a few facts which, although well known, will bear repetition. The heart of a newly-born infant is higher in the chest, and occupies a position more nearly horizontal than does that of an adult. The apex beat is outside the mammary line, farther to the left and also higher, and is most often found in the fourth intercostal space. The costal cartilages are very pliable and do not interfere to a marked degree with the manipulation of the heart, and there is also a larger portion of the organ exposed.

PROCEDURE

The procedure is best carried out with the infant lying upon its back in a wide basin filled with sufficient water at a temperature of 110 degrees to 120 degrees F., to completely cover the body, the head supported so that no water can enter the mouth or nose.

Using both hands, grasp the body of the infant in such a manner that the thumbs rest upon the anterior surface of the chest, the fingers extending across the back, as in the Schultze method of artificial respiration. The thumb of the left hand should cover the third intercostal space almost against the left border of the sternum, while the right thumb is placed over the fourth intercostal space directly in the mammary line.

Now make deep pressure, first with the right thumb, which forces the blood out of both ventricles; from the right ventricle through the pulmonary artery to the lungs, and from the left ventricle through the aorta to the arteries of the body; then with the left thumb, causing both auricles to contract and forcing their blood into the ventricles. This alternate pressure should be made at the rate of one hundred per minute, until the heart is distinctly felt to beat of its own accord, then it is safe to start artificial respiration efforts. Of course, the efforts would be in vain if the infant had been dead too long, or if, after starting the heart, normal respiration could not be established.

As an illustration of the method of heart massage, I will give the history of the last case in which I was compelled to resort to the use of this procedure.

ILLUSTRATIVE CASE

The patient, Mrs. B., a lady of English nationality, was born in Florida, of healthy parentage. Her father and mother both living and in good health, the mother having given birth to sixteen children, all living, the last one born when she was fifty years of age. Mrs. B., is 28 years of age, strong and robust, seemingly in perfect health.

On January 28th, at 3 a. m., I was called to attend her in her first confinement. She had been having pains since 6 p. m., but after preparing the patient and thoroughly scrubbing and disinfecting my hands, on making a digital examination I found practically no dilatation; so leaving a nurse in charge I returned home, promising to see her next morning if not needed sooner.

January 29th I visited the patient again, but still finding very little change in condition of the cervix, left to make my round of professional calls. At about 2.30 p. m. the nurse telephoned me that the bag of waters had ruptured and labor pains had commenced in earnest. I arrived again at 3 p. m., and on making digital examination found the os about two-thirds dilated, patient having very forcible pains on an average of one every five minutes.

The child's head was quite large, the pelvic outlet small and narrow, and the bones well padded with fat; so that although the pains recurred frequently and with much force, the birth progressed slowly. However, as the head seemed to descend a little lower with each pain, I decided not to interfere instrumentally.

At 5 p. m., the head was born and the body quickly followed. I noticed at once that the infant was pale and lifeless, making no effort to breathe, and after several tests no pulse or heart beat being ascertainable, I was certain we had a stillborn child. The umbilical cord was very small, thin and tightly compressed between the index and middle fingers of the right hand, evidently completely shutting off placental circulation.

Ordering the basin of hot water, I quickly released the cord, cleaned the mucus from the mouth and throat, and placing the infant in the basin of hot water commenced to massage the heart as described above. This I continued steadily for five minutes, when, the heart taking up its duties, I began using the Dew method of artificial respiration, which is superior to any other in these cases, as it can be used wthout removing the infant from the basin of water. In a few minutes the heart quit beating again, so we had to stop the efforts to induce respiration and resume the heart massage once more. This time the tongue was firmly grasped with compression forceps and rhythmic traction made on that member while the heart was being massaged. After a few minutes, the heart taking up its burden again, heroic efforts to establish respiration were resumed, using besides the Dew, the Sylvester and Schultze methods; the mouth-to-mouth inflation of the lungs, which is sometimes possible; occasional douching of the chest with cold water; dilatation of the sphincter muscle of the rectum, and others. After working strenuously for one hour, the heart beating steadily since its second start, normal respiration commenced, the child cried lustily and the battle was won.

The cord was left intact until the infant was completely resuscitated, in the belief that it aids somewhat in the re-establishment of normal circulation.

The Organization of Infant Mortality Work in Cleveland, Showing the Relation Between A Municipality, A Babies' Dispensary and A University

BY DR. H. J. GERSTENBERGER*

Associate Professor of Pediatrics, Western University; Medical Director of the Babies' Dispensary and Hospital; Director of Department of Child Hygiene, Cleveland, O.

The presentation of this subject is primarily due to the request and suggestion of the Foreign Hon. Secretary, Dr. Janet Lane-Claypon, who had an opportunity, while attending the last annual meeting of the American Association for the Study and Prevention of Infant Mortality, to personally inspect the infant mortality work in Cleveland; and, secondly, to the assumption that the story of how in Cleveland an ideal organization in the rough has gradually been developed might act as a precedent and stimulus to other communities, especially to those who at the first glance have no such possibilities, but who, nevertheless, have them in a latent form.

*Read before National Conference Infant Mortality, London.

For every combat there exists an ideal plan which takes into consideration not only the needs of the present, but also those of the immediate future and distant future as well, and which accomplishes the best result with the least expenditure of time, energy and funds.

Besides such an ideal plan, however, there is as we all well and sadly know from experience, the practical plan of the moment, which means a plan that embodies as much of the ideal plan as is practical or politic at the time being.

Although no big work can be built without an ideal plan, yet the rapidity with which this plan is fulfilled depends more upon the practical plan than upon the ideal plan itself. It is far more easy to make the ideal plan than the practical, for the simple reason that for the building of the former nothing more is necessary than a thorough knowledge of the causes of the conditions to be wiped out and the best means to remedy the same; whereas for the development of the latter, there is necessary, in addition to this thorough knowledge of the subject, a thorough acquaintance with all of the agencies of a community that might in the course of their routine work or otherwise, be helpful and useful in the actual campaign, and also the ability to choose the most opportune time and place to bring about this co-operation. This acquaintance with the various possibly helpful agencies of a community does not simply mean the knowledge of their individual names and the type of work they are doing, but implies a personal acquaintance with the individuals in charge, a knowledge of the ideals of their own work, a thorough inspection of their machinery and working methods, an attempt to view their work as well as one's own from their view point—i. e., putting oneself in the other person's boots and to see and plan how to help them—an attempt to view their work from one's own view point, and to see and plan how they can help, or even modify their own activities to be better able to aid without harming themselves and the general development of the community along health and social lines.

The success and the organization of a broad work in Cleveland is due far more to the accomplishment of this practical plan than to that of any one ideal, although the latter has not been absent.

Before picturing Cleveland's progress in its infant mortality work, it will be well to briefly describe the environment in which this work was allowed to grow up.

Cleveland is a city 117 years old, and has a population of some 630,000 people. In 1900 its population was in the neighborhood of 300,000. So its development into what we may call a large city has occurred rather recently, and this fact is the main reason why the most important of Cleveland's philanthropic health and social organizations are of comparatively recent birth, which again is responsible for the absence of hard and fast customs, practices and precedents, which we are told exist in the older larger cities and are a stumbling block to those who wish to attempt intimate and efficient co-operation.

There is, however, another reason why co-operation and constructive work are comparatively easy in Cleveland, namely, the fact that practically all of Cleveland's important charities and social institutions are financed by a relatively small group of Cleveland's wealthy and well-to-do men and women, who are sincere in their purpose, who wish the same methods and soundness of principle employed that brought them success in business, and who are interested in the constructive development of the whole health and social field rather than one department of the same to the exclusion of the rest. How such a status of affairs is bound to promote rather than to handicap co-operation amongst the philanthropic health and social agencies can readily be understood.

Another important factor in making the environment for health and social work better in Cleveland than in most other cities is the awakened and advanced public opinion on health and social matters, and the high intelligence and personal interest of the men in political control of the municipality.

The first attempt to reduce the infant mortality of Cleveland began in 1902, with the formation of the Milk Fund Association by a public spirited lady, Mrs. Edith Dickman, aided by her advisers, Drs. H. H. Powell and J. J. Thomas. During the first two summers the activity of this Association consisted in supplying modified milk to babies who were brought to the physician in charge for examination and treatment. No home visits were made nor was an education of mothers attempted. Owing to the great expensiveness of the modified milk but relatively few infants could be cared for, and the Association then decided to change its activity to one of supplying a good raw milk at a low price to anyone who applied. In order to be sure of a good supply of milk, Miss Dickman gained control of a farm and gradually developed therefrom a dairy farm producing from tuberculin-tested cows a milk with a low bacterial count. The development of the farm was a big accomplishment, but it was, of course, the only one, for owing to lack of funds no investigations regarding the health and home surroundings of children receiving the milk could be made. This was the extent of the work until 1906, when the writer, after having had in 1905 the privilege to work in the newly opened Saeuglingsfuersorgestelle III., of the Schmidt-Gallische Siftung in Berlin, with the physician in charge, now Professor Salge of Strasburg, was asked by Dr. J. H. Lowman, the physician first among those of Cleveland interested in the prevention of disease by social improvement and education of the public, to attempt an improvement of the infant mortality work in Cleveland. He pointed out the existence of the Milk Fund Association and also that of the Visiting Association, an organization sending nurses into the homes of the sick and needy, and furthermore, the possibility of effecting a co-operation that might enable the establishment of an institution like the one the writer had described to him, which combined medical examination, supervision and direction of the work, nursing care and supervision, especially in the homes, together with the simple milk station. This suggested co-operation was then effected, and on July 5, 1906, the Infants' Clinic of the Milk Fund Association and the Visiting Nurse Association was opened. In this co-operative plan the Milk Fund Association supplied the milk, both in bulk and in modified form, the Visiting Nurse Association the nurse to aid the physician in the clinic and to control and educate the mothers in the home, and Dr. J. J. Thomas and the writer gave their medical service.

This clinic was placed in the poorest, most populated part of the city, but in order to emphasize the great need of such work, patients from all parts of the city—provided that they were financially unable to supply their own physician—were admitted. The attendance grew rapidly, and so it became evident to all medical and lay people who had become intensely interested in the work of this little clinic that growing space had to be provided. This was accomplished mainly through the efforts of the much-lamented Dr. E. F. Cushing, who had long ago hoped and wished for a babies' hospital and who saw here the opportunity to awaken the interest necessary to establish this much-needed institution. In December, 1906, as a result of Dr. Cushing's efforts, the Babies Dispensary and Hospital was incorporated to carry on and develop the work of the Infants' Clinic: ground was purchased and plans were drawn of a group of buildings consisting of a large dispensary and nurses' home, a hospital, an isolation house and a milk labarotary. With April 1, 1907, the writer became medical director of the institution, gave up his practice and devoted his entire time to the development of the work. In may, 1907, one of the large frame houses on the purchased property was remodelled and used as a babies' dispensary, where both well and ill infants were cared for. One of the rooms of this building was equipped and used as an emergency hospital for desperately ill babies for whom no beds were available at the time in any of the general hospitals of the city. Another reason for having this room was to emphasize the crying need of hospital beds for sick babies to the lay people interested in the work.

Two other rooms of this same building were used as the milk laboratory, where most of the milk used was put into quart and pint jars, where also milk was modified, poured into tubes and pasteurized for those infants who were very ill, and whose parents were for some reason—sickness, ignorance, too much work, etc.—unable to prepare the baby's food at home. At this stage, the Milk Fund Association was still in existence, and inasmuch as it had set for itself the work of distributing good milk in pint and quart jars it carried the expense of this part of the milk laboratory. At a later date the Milk Fund Association voluntarily sought amalgamation with the Babies' Dispensary and Hospital, transferred all its possessions to the latter institution, and in its last report urged its supporters to now aid the Babies' Dispensary and Hospital as they had the Milk Fund Association in the past.

This amalgamation brought to the former the control of the dairy farm, which had, however, for some time been regularly supervised by the medical director of the Babies' Dispensary and Hospital as a trustee of the Milk Fund Association.

The work of the Babies' Dispensary grew with rapidity so that the large frame building became too small. For this reason and also for the more important one, to encourage more mothers to come with their well babies, branch dispensaries were opened in the most crowded districts of the city. These were most simple in their arrangement, which was possible because they were used for well babies only. (One waiting room, one examining and weighing-room, chairs, tables, stove and cupboard.) These were the Prophylactic Babies' Dispensaries, as they are called in Cleveland. Whenever an infant attending one of these dispensaries became ill it was sent to a private physician, or if its parents were too poor, to the Central Dispensary in the frame house. At this Central Dispensary the most of the work consisted in caring for ill infants, but well babies from the immediate district about it were also admitted.

During 1908 six branch dispensaries were opened and the city accordingly divided into seven districts—one district for each of the branch dispensaries, and one for the prophylactic work of the Central Dispensary.

The Central Dispensary acted as the clearing house of the entire work, and was the hub of the wheel. The methods used by doctors and nurses in examining and caring for the patients, in solving social problems, etc., are the same in each dispensary. This important uniformity has been brought about by requesting both doctors and nurses to do duty at the Central Dispensary in order to be eligible for duty at the branches. The nurses continue to keep in direct touch with the Central Dispensary by reporting there at a definite time every day, by being on duty there on certain days during the dispensary hours and by attending a nurses' meeting once per week.

It is impossible at this place to go into the real detail of the organization, although there is nothing more important to the accomplishment of real work, especially by the nurses, than a system carefully worked out, supervised and constantly remedied to meet new needs and developments. In the work of establishing a system the writer has been materially aided by his ever ready and able superintendent of nurses, Miss H. L. Leet.

The scheme of centralizing as much of the work as possible was also carried out in the milk work. All of the milk was bottled—as stated before about 90 per cent in pints and quarts and 10 per cent in modified tubes—at the Central Milk Laboratory and delivered from here, at first per hand-cart, then per horse and wagon, and finally per automobile, to sub-stations which were in grocery stores, drug stores, meat shops, etc., near the homes of groups of patients. The orders and prescriptions for milk were telephoned daily at about noonday to the Milk Laboratory by the nurses in charge of the branch dispensaries. They were enabled to do this because the branch dispensaries (prophylactic babies' dispensaries) were open in the forenoon. This had the further advantage that patients found ill at the branch in the morning could be sent to the Central Dispensary, which was open during he afternoon. This arrangement further made it possible for the nurses to be on duty at the Central Dispensary, to accompany the sick patients there and to keep in touch with the so-called sick-work—an important factor in keeping up the interest of the nurses in their difficult work.

The material at the Central Dispensary was also used for teaching medical students. This was instituted by Dr. E. F. Cushing, Professor of Pediatrics at the Western Reserve University, who ordered that the seniors receive their practical training in the diseases of infants at the Central Dispensary, and who placed the medical director of the Babies' Dispensary on the Universary teaching staff, and entrusted to his the teaching of nutritional disturbances and infant feeding, and so established a connection with the medical school.

The character and development of the work during the next two years made it seem advisable to build, if the money was not ample for the erection of the entire group, at first the dispensary and milk laboratory rather than the hospital. This was the plan followed and in the spring of 1910 the present Central Dispensary and Milk Laboratory were built as a memorial to Mrs. Anna R. Wade, mother of the donors, Mr. and Mrs. J. H. Wade.

From the very beginning of the work numerous lectures on the causes of infant mortality, and the means to prevent them, were given in popular form all over the city, wherever an audience could be obtained. This is mentioned because this activity undoubtedly made many individuals acquainted with the Association's work, and thereby helped to make friends for the institution's cause.

The public press also became interested and was so well managed by our superintendent of nurses, Miss Leet, that, when in 1911 it was found that the City Council had $10,000.00 in its treasury to be used in some profitable manner, it voluntarily began a campaign that not only gave the $10,000.00 to the Board of Health for infant mortality work, but also made the Babies' Dispensary advisors to the former in the manner of the application of the funds, and ended in establishing a department of child hygiene at the Board of Health with the Medical Director of the Babies' Dispensary and Hospital as director thereof. This established a direct relation between the municipality and the private philanthropy.

As soon as the money was available five new prophylactic babies' dispensaries were opened by the Board of Health, which assumed the same relation to the Central Dispensary of the Babies' Dispensary and Hospital as did the regular branch dispensaries of the latter. So at this time, July, 1911, Cleveland had eleven prophylactic babies' dispensaries and one central dispensary, the latter acting as the hub of the entire work and caring for all of the sick, and for the well babies of its immediate district. After a lapse of three months it was found that at the close of the year money would still remain in the department of child hygiene. So five of the branch dispensaries of the Babies' Dispensary and Hospital were transferred to the Board of Health, now making ten prophylactic dispensaries in charge of the Department of Child Hygiene. During the first half of 1912 the last branch of the Babies' Dispensary and Hospital was transferred to the Department of Child Hygiene, and in July, 1912, the budget of the latter was increased sufficiently to permit the addition of two more, making a total of thirteen, and at the present writing the total will have increased to fifteen. The two prophylactic babies' dispensaries opened by the Department of Child Hygiene in July, 1912, were placed in the immediate neighborhood of the Central Dispensary of the Babies' Dispensary and Hospital, in order to entirely relieve the latter of its "well work" at the Central. This arrangement gave to the Department of Child Hygiene all the prophylactic work and to the Babies' Dispensary and Hospital of all the "sick" work, and so markedly increased the value of the Central Dispensary as a teaching place for medical students in the diseases of infants and young children.

The transference of its six branch dispensaries to the Board of Health enabled the Babies' Dispensary and Hospital to apply its funds to the development of other weapons in the fight for the betterment of infant life. An enumeration of these will suffice:

(1) A nurse devoting her entire time to the prevention of blindness by answering calls to infants with sore eyes, and seeing to it that they receive proper attention at the hands of competent physicians.

(2) A boarding house system of one child per home, one nurse devoting her entire time to developing proper homes and controlling them, and the children they accept and care for.

(3) A nurse devoting part of her time to demonstrate to the Board of Education the possibility of teaching infant hygiene to the seventh and eighth grade girls of the grammar schools.

(4) A nurse devoting her entire time to teaching and training nurses in this special work.

(5) The operation of the babies' ward of the Children's Fresh Air Camp, another philanthropic institution caring for children during the summer months, in conjunction with this institution.

Of the above the nurse doing ophthalmia neonatorum work has been transferred to the Department of Child Hygiene. Still another has been added by this department and a third delegated to it by the State Commission for the Care of the Blind, to control mid-wives and help care for children and adults having dangerous eye diseases.

That there is no one-sided co-operation between the Department of Child Hygiene and the Babies' Dispensary and Hospital, to the advantage of the latter, is proven by the fact that all of the milk used at the Board of Health Prophylactic Babies' Dispensaries is supplied by the Babies' Dispensary and Hospital. In this connection it may be stated that the Municipality will, in all probability, produce its own milk in the near future, inasmuch as it owns and is developing a farm of some 2,000 acres just outside of the city limits.

From the description so far given, it is already clear that the role played by the Babies' Dispensary and Hospital as a philanthropic institution has been one of pioneering, demonstrating and proving the need and value of certain measures; that of the Municipality of accepting weapons found sound and able, and using them to the fullest degree possible in the fulfilling of one of its most important duties—the protection of its infant population.

The Babies' Dispensary early in its life insisted upon the entire time of its medical director, and so gave the latter the opportunity to keep in touch with the progress in scientific pediatrics, and this fact more than any other is responsible for the respect that the institution enjoys amongst the important medical men, the respect that has enabled it not only to intimately co-operate with the Municipality, but with the Medical Department of the Western Reserve University as well.

The climax in the co-operation with the latter came with the beginning of the school year 1912-13, when the writer, after becoming the successor of Dr. Cushing at the Medical School, succeeded in having eight hours placed upon the compulsory curriculum of the senior year for practical training in the social medicine pertaining to infant mortality work. This training consists in demonstrating and explaining in detail the work of the physician and nurse in the Central Dispensary of the Babies' Dispensary and Hospital, in a prophylactic babies dispensary, and in the "blind" and "mid-wife" work of the Board of Health, in the home of a patient, in one of the Babies' Dispensary and Hospital boarding homes, and in the co-operation with various philanthropic associations, as the Associated Charities (material relief), Humane Society, Juvenile Court, Tuberculosis Dispensary, Department of Housing and Sanitation of the Board of Health, Visiting Nurse Association, Day Nursery Association, Blind, etc. Besides the eight hours devoted to this social medical work an additional eight are spent in the milk laboratory of the Babies' Dispensary and Hospital, where under direction the students prepare the various foods. One or two lectures on the general aspect of infant mortality work are given in the course of the regular lectures on pediatrics.

From this brief description it can be seen how the University has been given the advantage of using the teaching facilities of a philanthropic institution, the Babies' Dispensary and Hospital, of a municipal institution, the Department of Child Hygiene of the Board of Health; and on the other hand the Municipality and Babies' Dispensary have the satisfaction and pleasure of knowing that they are helping to bring about a better training of medical men. And what is of greater importance both to the work and to the medical profession itself than the thorough training of the future advisors of the mothers and of the nation in preventive health measures?

As a brief means of recapitulation the accompanying dia-

DIAGRAM I.

PRESENT ACTIVITIES OF BABIES' DISPENSARY AND HOSPITAL, BOARD OF HEALTH, AND WESTERN RESERVE UNIVERSITY, CO-OPERATING IN THE REDUCTION OF INFANT MORTALITY IN CLEVELAND.

Director of Entire Work

BABIES' DISPENSARY AND HOSPITAL (*Medical Director*)	BOARD OF HEALTH (*Director of Department of Child Hygiene*)	WESTERN RESERVE UNIVERSITY (*Associate Professor Pediatrics*)
Central dispensary for ill infants and young children. Central milk laboratory supplying needs of Babies' Dispensary and Hospital and Board of Health. Training of medical students by practical experience with ill infants. Training of medical students in milk laboratory. Training of nurses of Department of Child Hygiene and of special classes. Boarding home system—one child per home. Teaching of infant hygiene in public schools. Popular educational lectures. Outdoor ward during summer months. Babies' ward of Children's Fresh Air Camp (summer) Wet-nurse bureau. Sewing-classes for mothers (Prophylactic Babies' Dispensaries, Department of Child Hygiene).	Thirteen prophylactic babies' dispensaries. Two nurses for ophthalmia neonatorum work. One nurse for control of midwives and neglected eye cases of older children and adults. Use of Prophylactic Babies' Dispensaries and of ophthalmia neonatorum material for teaching medical students and nurses. Use of Prophylactic Babies' Dispensaries for mothers' sewing-classes in conjunction with Babies' Dispensary and Hospital.	Training of medical students in diseases of infants, especially nutritional disturbances, infant feeding, preparation of various foods at milk laboratory of Babies' Dispensary and Hospital; general aspect of infant mortality work, and special parts of it by practical experience in machinery of Babies' Dispensary and Hospital, and Department of Child Hygiene, Board of Health.

grams show the working scheme as it to-day exists between the Babies' Dispensary and Hospital, the Department of Child Hygiene of the Board of Health and the Department of Pediatrics of the Western Reserve University.

In this brief sketch it has, of course, not been possible to picture all of the various co-operative activities in Cleveland's infant mortality work, and, therefore, it will be in order to simply state that in carrying out the work planned to improve the chances of the infants the older children and adults are not being overlooked. On the contrary, they are being considered quite as much as the infants, especially by the nurse who continually comes in contact with them in the home, and are when in danger or already ill, referred to the proper authorities for aid and advice.

The great importance of the infant mortality work does not lie solely in the improvement of the chances for the infants, but for those of the adults as well. The infant simply is a more sensitive and delicate indicator, and that is why there is ample justification in attaching the greatest importance to the work that has as its first aim the prevention of sickness amongst infants and children.

CONGENITAL INGUINAL HERNIA—SUPPRESSION OF URINE*

BY C. B. SPALDING, M.D.
Louisville, Kentucky

A male child, aged four years, had a congenital inguinal hernia, which had been reduced a number of times, so the parents stated; but they were so densely ignorant that no definite history could be obtained. At the time I saw this little patient the hernia had descended, obstruction had occurred, and an emergency operation was imperatively demanded. A knuckle of the small intestine was found obstructed, and after considerable difficulty reduction was accomplished without enlarging the internal ring. Quite a large lymphatic gland was noted in the mesentery of the obstructed portion of the intestine. The operation was comparatively simple, and there were no features worthy of note in connection therewith. There occurred no paralysis of the intestine nor was any further trouble experienced from the hernia.

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*Clinical report before the Louisville Surgical Society.

The second day after the operation, for which chloroform was administered as the anesthetic, the nurse noticed considerable sediment in the child's urine. Upon examination it was found that the urine was highly colored, that it contained pus the colon bacillus predominating, albumen and blood being also present. After that the child voided no urine for forty-eight hours. The eyelids became decidedly puffed, the legs and feet were considerably swollen, the child apparently suffered terrific pain, and, as most children do, said the pain was in the "stomach," i. e., he would place his hand just below the ensiform cartilage and say the pain was there. The treatment consisted of hot packs, diuretics and purgatives.

I regarded this at the time as a case of acute suppression of urine due to bilateral pyelitis. At the end of forty-eight hours the child began to urinate, and within twenty-four hours the quantity rapidly increased. The amount of urine voided now is about normal, but albumen is still present.

In a retrospective study of this case it has occurred to me that there might have been a stone in the ureter.

In discussing he foregoing report, Dr. Louis Frank said the child might have had a pyelitis from colon bacillus infection, and a similar infection of the bladder might have occurred. He thought aside from the absorption of toxins which should be excreted by the kidneys, chloroform might induce renal lesions in children as well as in adults. Urinary suppression, the presence of blood, casts, etc., in the urine might result from chloroform as well as from ether, nothwithstanding the belief so long maintained that chloroform had no such action. The action of chloroform upon the liver might be much more disastrous than that of ether. Ureteral stone was possible, as renal calculi had been reported in infants at birth.

SOCIETY TRANSACTIONS

THE NEW YORK ACADEMY OF MEDICINE

Section of Pediatrics*

Stated Meeting Held December 4th, 1913

THE PRESIDENT, DR. WILLIAM M. POLK, IN THE CHAIR

The Education of Crippled Children.—Dr. G. G. Davis of Philadelphia presented this paper. He stated that although he did not feel altogether competent to speak on this subject it was one that appealed to him so strongly that he had to do what he could to further the progress of the study of this problem, which was at present in an unsettled, early, and primitive stage. Educators had not succeeded in establishing any standard for the education of the normal child, but, in addition, they had the solution of the problems arising from the crippled children. It was evident that the methods employed in the two classes must be different. The crippled children formed an intermediate class between the totally well children who could be driven and actually flourished under it, and the sick children who needed rest, soothing and supporting measures. The crippled child should have a distinct, separate, special method of treatment adapted to his peculiar needs. The education of the crippled child was intimately associated with his bodily care; the two should be considered together. They were, therefore, confronted with the following problems: 1. Maintenance. 2. The care and treatment of the disabilities of the crippled child. 3. His general education. 4. Character formation or moral education. 5. Vocational training. 6. Later supervision. The number of cripples was so great and their education and maintenance so expensive that in the present state of society it had been found necessary to establish institutions for them, even though the substitution of institutional life was not desirable from many points of view. It was the duty of the institution to resemble home life as far as possible. The question of maintenance should be more carefully looked into than had been the case in the past. The child should be provided with such nourishment as would tend to improve and conserve his health. There was a great field for usefullness in their modern Social Service in the endeavor to meet this need. As to disabilities, if the child could walk to school the problem of its education was simplified. Ohthopedic treatment was of the first importance. The more successful it was the more it broadened the child's capabilities. For this reason it was essential that institutions for crippled children should be equipped so as to provide the constant orthopedic treatment that these cases required. Even in the day schools there should be some one capable of doing the more simple dressings and adjustment of apparatus that might be needed. The orthodox orthopedic hospital might relieve the educational institutions of a certain portion of this work, but not all of it. As to general education, the crippled child had greater need of a good general education than the normal child, as the latter had greater opportunities of acquiring knowledge. For education to be successful it shoud be sufficiently thorough for the child to eventually become self-supporting. The wider the education the greater would be the choice of occupations in later years. If the State paid for the common school education of the normal child it should also contribute to that of the cripple. Parents were apt to be neglectful and to allow a crippled child to grow up ignorant; they should be taught that this was an error. Family teaching was one of the greatest value and when children were in the hospitals, teachers were now provided for them during their stay. To care for the out-patients they had social workers and the day schools to which the children were brought and again taken to their homes. It was not possible to teach cripples in the same manner as well children. Their disabilities were so varied that it was necessary to devote a large amount of individual attention to each child. Therefore, a larger number of teachers was necessary for a given number of children than in the ordinary public school classes. The classes of crippled children should not be so large. They should decide in each individual case when it was safe for the general health of the child to sacrifice a certain portion of its outdoor life for indoor instruction. Although both the Montessori and Froelian systems had their good points, one should use judgment in imposing them on the individual cripple. As to character formation or moral education, it should be emphasized that while intellectual development was of importance it was insignificant as compared with good character. The problem was how to rear the cripple so that he should develop into an industrious, unselfish, honest, and reliable citizen. How could they ever be made self-supporting if they were lazy and unwilling to work? How could ambition be infused into them so that they would endeavor to help themselves instead of being content to be parasites all their lives? Many things influenced the formation of character, but precept and example were the most powerful. If the cripple could be surrounded by good associates that would be the best guarantee that he would develop correctly. The greatest influence was exerted by good home life. To take the crippled child away from good and loving parents and to place him in an institution was a great mistake. If charity must be doled out it was better to dispense it in the home. No child should be placed in an insitution that could possibly be kept out. If an institution was to stand *in loco parentis* the greatest care should be exercised to see that all the officials and teachers and employees—everybody who came in contact with the children—should be of the best possible character so that the child should insensibly acquire the views and habits of thought which would be best for him in the future. The children should not be handled in masses, but should be brought into personal contact with their caretakers and teachers. Persons suitable to fill such places were not easy to find. As to vocational training, manual training was not necessarily vocational training, Its primary object was development. It was to teach children to do things for themselves, to think, and reason, and accomplish something by their own unaided efforts. It was a mistake to restrict vocational training to a few stereotyped forms and thus to confine all to a narrow choice. The first step was to find out what was most desired by the child and what he was best fitted for, and then an effort should be made to fit him into that line. In regard to subsequent supervision, the speaker said that many cripples as they approached maturity lost their home ties and were left to fight their own way alone, when they were apt to retrograde or fail entirely. They should be made to feel that there was someone who was interested in them and who was watching their progress. They should be encouraged to keep in touch with their alma mater until they had definitely established themselves and formed a circle of friends elsewhere. The adult cripple had been too generally treated as a pauper, but if through State aid or private beneficence a cripple child had been reared and fitted for the duties of life it was certainly their duty to give him that moral support that every beginner in the struggle for existence needed to enable him to safely pass over the bridge which connected the productive and the non-productive periods of life.

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*Medical Record.

Industrial Training For Cripples.—Dr. Augustus Thorndike of Boston said that industrial training in a special school probably began in America when the Industrial School for Crippled and Deformed Children opened October 4, 1893. The growth and progress of the school had been uniform. Instruction was given in the following industrial branches: sewing and dressmaking, basket-making, cane-seating, cobbling, cooking, typesetting and printing. One or two hours of the time allotted to school work was spent each day in the open-air schoolroom. The Massachusetts State Hospital School for the Care and Education of Crippled and Deformed Children of the Commonwealth, authorized by the Legislature in March, 1904, was formally opened by the Governor's proclamation December 1, 1908, the first pupils being received January 14. The school accommodated at present two hundred and sixty crippled children between the ages of five and fifteen, although a few of them were older. Instruction in the first eight grades of the public school system was given, mostly in out-of-door schoolrooms, to small groups for short periods, the younger children receiving instruction for an hour and a half a day, and the older for two hours. Sewing was taught in graded classes, also drawing, stenciling, .painting in water colors, and sloyd carpentry. In addition to this, small groups were instructed in printing, cobbling, making moccasins, carpentering, house painting, steam-fitting, electric wiring, the care of steam boilers and engines, and a number of the older boys were taught farming, both the care of livestock and gardening; while the older girls learned domestic science in a small cottage, where they did all the housekeeping and housework. The first class graduated last year, and they, together with many who had left the school without completing the course, were at work at various occupations. In closing Dr. Thorndike alluded to a Boston society formed to secure employment for cripples—the Kings Chapel Club for the Handicapped.

Mrs. Henry Goldman described the *Crippled Children's East Side Free School*, which had been created twelve years ago. The purpose of this institution was to give crippled children an education, to better their physical condition, and to render them self-supporting by means of manual training. During the first six years of the existence of the society, classes were conducted in elementary training with good results, whereupon the needs of this neglected class were brought to the attention of the Board of Education with the result that there were to-day classes for cripples in many of the public schools in the city, and greater provisions would no doubt be made in the near future. Under a staff of able physicians an infirmary was conducted in connection with the school and there was hardly a child in the school that had not for months undergone medical or surgical treatment of some kind. Dr. Wallace could give a more satisfactory report of this part of the work from professional standpoint. The school had a trained nurse and three assistants who bestowed individual attention on each of the 230 pupils. It was most important that physical development should form a part of the curriculum of every institution for crippled children. The great and important aim of their efforts had always been manual training, adapted to the needs of the crippled children. Eight years ago they had organized a workroom with but two girls. By careful and proper training they now had 40 workers who had become producers of needlework and accurate machine work. Two of their own girls were now earning from fifty to sixty dollars a month as assistants to the manager of the workroom. The receipts of the workroom this year were over $10,000, and almost $5,000 had been paid to the workers in wages. No doubt better results could be obtained if there were ways and means of bringing this work before the public.

Miss Grace S. Harper, general secretary, King's Chapel Committee for the Handicapped, Massachusetts General Hospital, Boston, said there were a few points which had been touched upon and which she would like to emphasize as most important from the main point of placing and "after care" for cripples. The formation of character and stimulation of ambition from as early an age as possible were quite as important as education. If a crippled person was turned out into the industrial world—and needed to earn his living, he must also be able to get along with his fellow workmen and fit into his job. This lack of character and metal warp which was so common among cripples had been their greatest handicap in the successful placing of them Dr. Richard Cabot was the means of starting the King's Chapel Committee for the Handicapped in Boston. The problem, as it seemed to him at the time, consisted of two things to be done—first, to find out what trade and occupations could be performed by persons variously handicapped; second, to find employers in these industrial shops who would be willing to give such persons a trial. This left the putting of the man into the job, and here was where the question of lack of character—and the mental outlook had proved to be the greatest obstacles. Much of the fault for this difficulty lay with the community and much with the pearents. She personally would hesitate to take too much of the responsibility from the parents, by providing school, inasmuch as the children had to return to their homes when of age and the parents would not then be ready to maintain the discipline and teach the attitude of self-reliance at the most critical time. She thought that most schools might do a great deal in the way of teaching to the parents themselves. Many of them saw no farther than the present need and yet were intelligent when shown the almost absolute certainty that the crippled boy or girl was going to outlive his elders, and at some time would need to earn his living. If he was allowed to be dependent until past the age of adaptability he would probably become a beggar or a pauper. The teaching of every crippled boy or girl a trade or skilled occupation of some kind was another most important need. Many schools gave sloyd and occupational training, but few offered opportunities for learning a trade which would enable the pupil to obtain a position. She read an article a few nights ago, drawing attention to the thousands of unskilled boys and girls thrown on the market each year and to the constantly increased demand for skilled workers. This was a plea for training for the average normal boy or girl. If able bodied children needed such training, how much more so did the crippled ones who had little choice or selection? And yet they were educating many and turning them out without the essential training which would give them a chance to earn their bread and butter. The problem of placing cripples after leaving school was a difficult one and so far not much concentrated effort had been made in this country. Their committee had now had two years' experience which though slight had brought out many points: firstly, that little could be done without personal work for each individual. The worker had to establish friendly relations and in many cases gave the advice and steadying hand which should have come from the parents. Secondly, when a boy or girl had been placed in a position, the interest and close touch with him must be continued for some time. The cripple was usually a child for a much larger time than the average person.

RETROSPECT OF CURRENT PEDIATRIC LITERATURE

Diseases of the Alimentary System.

Under the Charge of

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A Note on the Occurrence of the Colon Bacillus in the Blood. By P. N. Panton, M.B., B.C. Cantab., M.R.C.S. Eng., L.R.C.P. Lond.; and H. L. Tidy, M.D. Oxon., M.R.C.P. Lond., M.R.C.S. Eng., The Lancet. While infections of the body tissues by the bacillus coli are extremely common, and while there is every reason to believe that spread of infection in no inconsiderable number of cases takes place by way of the blood stream, it is remarkable how rarely direct prooof of blood infection can be obtained during life. We are not acquainted with any publication of English literature in which the bacillus is claimed to have been obtained from the blood stream. Blood cultures made from persons suffering from undoubted coli infections are almost invariably sterile, but it has happened to us on three distinct occasions during the last nine months to obtain from the blood a pure growth of the colon bacillus. In two out of the three cases the blood was withdrawn at the commencement of a true rigor, and while the patients were actually shivering. In the third case the blood was obtained three and a half hours after a rigor. In other and subsequent cases of similar infections blood taken a few hours after a rigor has been sterile. The following in a brief account of the three cases referred to:—

Case 1. This patient was admitted to the London Hospital under the care of Dr. Lewis A. Smith. His history was that four weeks previously he had been suddenly seized with acute abdominal pain and vomiting. The pain had been present at intervals since the onset. On admission the general condition and aspect of the patient suggested a man in the third or fourth week of typhoid fever. There were no local physical signs of disease other than indefinite signs of fluid at the base of the right lung. The Grunbaum-Widal reaction was completely negative and the blood count was that of acute inflammation. A blood culture was sterile. The temperature was high and intermittent with five rigors later in the disease. A second blood culture was made a fortnight later during the early part of a rigor. 10 c.c. of blood were taken and divided among four broth tubes. Three tubes remained sterile. The fourth tube yielded a growth of the bacillus coli. The cultural reactions of this bacillus were fully investigated and were in every way typical. The patient died 12 days later, and at a post mortem, were found a purulent appendix, peritonitis, a subphrenic abscess, pylephlebitis, and a considerable abscess in the liver.

Case 2. The next patient was admitted to the London Hospital, under the care of Mr. Frank S. Kidd, with a history of difficult micturition for 18 months. On admission he was suffering from acute retentionof urine and an enlarged prostate. The bladder was washed out and a rigor occurred during the process. Subsequently a suprapubic cystotomy had to be performed for secondary hæmorrhage, and blood and pus were present in the urine throughout. About seven weeks later 6 c.c. of blood were withdrawn from a vein three and a half hours after a rigor and divided among four broth tubes. Three tubes yielded a growth of the bacillus coli, typical in all its cultural characters. The patient died three weeks later from sepsis and a secondary hæmorrhage, which post mortem was found to have been due to ulceration into the deep epigastric artery.

Case 3. A married woman, aged 40, admitted to the London Hospital under the care of Dr. Francis Warner. Her history was that she had been confined five weeks previously and had been quite well until the tenth day after confinement, when she got up, but had a shivering fit and returned to bed. She had been in bed since and had had several shivering attacks. On admission the patient looked extremely ill, and was found to be suffering from a high intermittent temperature with occasional rigor. There was no abnormal vaginal discharge and the pelvic organs were healthy. A culture of the blood was made during a rigor. 5 c.c. of blood were obtained and divided among four broth tubes. All tubes yielded a profuse growth of a colon bacillus. A catheter specimen of urine contained pus and gave a pure culture of a colon bacillus in all cultural characters identical with that obtained from the blood. This patient is still in the hospital, and after three weeks remains in much the same condition except that the rigors have ceased. She presents no further physical signs of disease.

The Relation of the Gastric Secretion to Rheumatoid Arthritis. By A. S. Woodwark, M.D., Lond., M.R.C.P. Lond., and R. L. Mackenzie Wallis, The Lancet, Oct. 5, 1912. The relation to rheumatoid arthritis of some focus of pyogenic infection is regarded in many cases as indisputable. Among the many sources, oral sepsis undoubtedly holds the first place. Although a septic condition certainly plays some part, it is difficult to reconcile the absence of rehumatoid arthritis in many conditions apparently favorable to its productions conditions resembling in all respects those in which the joint affections have supervened. The present paper is the result of an attempt to reconcile this anomaly. Although only a preliminary announcement, the results upon which it is based are so striking that publication appeared to be fully justified. It is intended later to publish the results of observation of a larger number of cases.

The failure of alkalies to improve the joint affections in rheumatoid arthritis, although markedly successful in acute rheumatism, was noted by the earliest observers. It seemed possible that the absence of hydrochloric acid in the gastric secretion of one class—hydrochloric acid being well known as a potent germicide—might explain the demarcation between cases with an apparently similar degree of pyogenic infection. This suggested as a line of investigation the examination of the stomach contents after the administration of a test-meal.

Ten typical cases of chronic rheumatoid arthritis were selected. Ewald's test-meal, consisting of a piece of dry toast with one pint of weak tea without either sugar or milk, was given fasting, and the stomach contents were removed by a Senorans evacuator one hour later. It will be observed from Table I. that in all cases the amount of free hydrochloric acid and the digestive properties were markedly below normal, and in some cases almost entirely absent. In the absence of signs and symptoms malignant disease of the stomach could be excluded. The existence of this feature constantly in nine cases justifies the expectation that it will be found in almost every case of rheumatoid arthritis similarly investigated. Apart from the circumstance that in many cases an obvious septic focus—e.g., carious teeth—is at hand, the onus probandi, the identification of the source of sepsis does not appear to be essential, since opportunities for the introduction of pyogenic micro-organisms into the body are manifold and insidious.

It must be clearly understood, however, that it is not intended to suggest that the obvious source of infection should not be rigorously treated. The absence of hydrochloric acid, &c., also explains the frequency with which dyspepsia is encountered in cases of rheumatoid arthritis. The lines of treatment adopted as a natural sequence were to remedy the defect in the gastric secretion, and although these have only been employed for a short period of time, the results have so far been encouraging. This scheme of treatment, whilst it will if successful tend to destroy the causa causans, obviously will not affect the results already existing from previous infection, and it is therefore advisable to employ in addition those methods which have previously been found to be of service.

Alimentary Toxæmia. By Sir James F. Goodhart, Bart., M. D., Aberd., The Lancet, May 17, 1913. When I entered the portals of medicine 49 years ago there was a maxim abroad that no one became pyæmic from surface wounds. So that abrasions, skin lesions of various kinds, even such things as boils and carbuncles—and it may be assumed superficial abrasions of the mouth, and perhaps of the intestinal tract, were not considered likely to cause danger, some normal reactions of the part protecting them therefrom. And this being born of experience was largely true.

As regards the mouth, the disease that we now know as pyorrhœa alveolaris was never heard of in the days of which I speak.

Then with regard to the disease pernicious anæmia, let me ask the same question, is there any sufficient evidence at hand that Dr. W. Hunter's suggestion of its origin in oral sepsis has any effect in controlling the disease?

When we turn to the nether end of the digestive tract here also may be found an undue insistence upon what is but an occasional pernicious perversion of function, to the disregard of the consideration of those self-protective agencies that characterise healthy organs and tissues.

But there is another view that cannot be disregarded, which is: that the colon is a great benefactor, and has gradually elaborated itself, probably is still doing so, into a great organ of digestion. It is said that the colon absorbs little but water, but I cannot bring myself to believe it. To my sense the essential object of its existence is to expose as extensive a surface as possible to the food that is supplied to it, and to this end it has become an organ for delay and for storage. Yet, astonishing as it may seem, half mankind seems to consider these functions morbid, and is bent on defeating them. The colon should be full and not empty is my physiology, satisfied and not hungry; yet, encouraged by us doctors, hundreds of thousands of human beings have grafted into themselves the idea that their main object in life is to get their bowels open daily, for that should they fail in this they will be poisoned by the absorption of the noxious products that they suppose to be produced in their kitchen garden. We talk of the sacculations of the colon as if their sole use were as traps for bacteria that prove sources of septic inflammation and toxic fever, and so they may be, and are, upon occasion, but their main service is as extensions of the mucous surface of the bowel.

Then what of the contents of the bowel—the mucus, the hordes of various organisms, the juices, the gases? Who can controvert the assertion that all in turn are not alone serviceable, but necessary, by breaking up the food and in changing its nature, and by presenting it to the mucous surface in a more intimate and assimilable state?

Then these bacteria. Is it certain that they are themselves the poisonous agents? Do we know of a surety whence they come? Can we even state positively what they are? I gather that Dr. Ledingham might say no. And for myself I would like to hazard the opinion that with the loose habits known to prevail in these lowly symbionts it must often be a very wise child that can recognize its own father. Who will gainsay that in these early strata of living atoms life may be even suspected to be amphoteric.

As regards delay, it cannot be in doubt it is an essential function of the colon. I was fortunate long ago in coming across two cases of fistula low down in the small intestine, and from them I learned that coloured fluid (stout) taken in at the mouth reappeared at the abdominal opening in about seven or eight minutes. From which I assumed that fluids passed rapidly along the small intestine. That this is so has been abundantly proved by Hertz and others by means of the X-rays.

Again, that creamy chyme alone is found in the small bowel, and that as soon as the contents reach the cæcum many solids appear, show both what an enormous amount of absorption must go on in the large bowel and that delay is a necessity. And I would venture to submit that although upon occasion they may prove a source of danger, the kinks and pouches that are present in all cases are but the natural convolutions of a pleated surface brought about by this necessity.

Lastly, I would ask you to consider the intestinal muscle.. Short are its fibres; little by little is the feature of its action. A kink to you or me is no kink to it. Every minute of its day it is negotiating kinks and getting round corners, and it is, I suspect, only when a kink becomes something more and approximates to a volvulus that mechanical interference is called for. May I not be thought impertinent when I add that to see a kink with one's own eyes is not necessarily a proof that an obstruction, or even delay, is in being.

Infectious Diseases.

Under the Charge of

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Treatment of Erysipelas in Children.—Because we all dread the onset of erysipelas in young children on account of the excessively high mortality, we are influenced to favor one of two erroneous lines of procedure. Either we give the unfavorable prognosis which the gravity and statistics of the case warrant, and treat it too expectantly; or we fly to the other extreme and treat it too "energetically;" that is, we employ with too great assurance new recommendations in therapy which has occasionally brought us success in adults. We are convinced that a "middle-of-the-road" line of conduct in the fact of these grave cases is more rational. We do not mean that indications are to be ignored; the long-continued high temperature must be combated; the toxaemia must be assailed; the discomfort from the inflammation must be assuaged, and we must endeavor to maintain the best possible condition of nutrition through assimilation of easily digestible food.

When we know absolutely that the termination of the case depends in great measure upon the powers of resistance inherent within the patient and in the severity of the infection, one naturally recoils from the harsher methods of treatment we unhesitatingly employ in the adult. If we do this, we must defend our position with some better shield than the mere plea of compassion for the helpless babe—for the infection has no compassion for the tender years of the victim. The real reason we can assign, and the actual reason which should incline us to milder measures of therapy, is that the harshness of the treatment itself may do more harm than the disease, for the young child is very sensitive and reacts more strongly than does the adult to severe therapy. Moreover, it is utterly unproved that such severe methods, however much they may at times avail in the adult, have even been of undisputed effect in the young child.

It is nothing short of brutal to cut the skin of a child and saturate the incision with bichloride of mercury or with solution of carbolic acid. Generally the red line passes our incision unchecked. In the new-born, 95 per cent. of cases die; in children under one year, in the best and most experienced hands, 50 per cent. are lost. We would consider any practician who failed to employ vaccine therapy as utterly lacking in knowledge and in tact. Not that vaccine therapy has accomplished what we would wish, but that it seems to have sometimes shortened the course of the disease, and that in event of a fatal termination the family will learn of the treatment being a "sure cure" (?) and will never forgive the doctor. The fact is that in streptococci infections the results have been far less brilliant than they have proved in staphylococci cases, but still giving promise enough of possible benefit to warrant their continued use until we know more. Neither migration nor recurrence seems to be influenced by the injections.

We like to keep the room at about 60° F., protecting the child from cold by hot water bottles, but allowing the free circulation of air unless the temperature goes below the point named. We are convinced that every case will do better under liberal use of whiskey. We give 15 drops every two hours to a child under 2 years, and increase it if indicated. It is the best of all stimulants in this disease in young children. Iron is practically certain to do more harm than good. We use the cool pack if the temperature exceeds 104° F. We use 33 1-3 per cent. ichthyol in lanolin as a dressing, though we have also used the Epsom salt solution (see Medical World, May, 1913, page 205) in a few cases where the ichthyol did not seem satisfactory. We do not use solutions if much of the head or any great portion of the trunk is involved. We reduce the strength of the milk or whatever nourishment is being used, but we are careful to maintain the quality. We dilute with egg-water, barley water, or granum water. Fractional doses of calomel are practically always used. We long ago satisfied ourselves that echinacea was the best drug with which to combat the toxemia.

Tracheal Obstruction Due to Thymus.—H. L. Lynch (Archives of Pediatrics, New York, September, Vol. XXX) outlines a case in which the interesting points were that the dyspnea caused by the enlarged thymus was relieved by intubation, but returned shortly after the removal of the tube, that the patient, aged 3½ years, being of a type associated with status lymphaticus, could receive two injections of antitoxic serums without any anaphylaxis or fatal result and only have a slight erythema following the administration of the first dose; that the child, while asthmatic since birth, has never had convulsions. The child was wheezing like an old asthmatic. There was an area of dullness over the upper end of the sternum, the upper limit of the first intercostal space extending downward to about the fourth intercostal space; the lateral diameter from 3 cm. to the right of the median line and 2 cm. to the left.—A. M. A., October 25, 1913.

Serum and Vaccine Therapy and Their Application to Diseases of Children, Practitioner, December, 1913. David N. Nabarro describes the difference between serums and vaccines, their advantages and disadvantages, briefly the way in which they are prepared, and the indications for their use. To get the best results from vaccine treatment, "I, you must use the correct vaccine. You must have made your bacteriological diagnosis in the first place; in the case of urines, periodical examination should be made, in order to be quite sure that you have not cleared out the offending organisms, and are trying to treat another organism with the original vaccine. 2. Then the associated conditions must be attended to. It is absolutely useless to try to treat a patient with vaccine, and leave all other points unattended to. Matters of general hygiene, good feeding, attention to the bowels, fresh air, and so on, are requisite adjuncts tó vaccine, as indeed to all other forms of treatment. 3. Local conditions must be treated, surgically if necessary, when occasion arises. For example, collections of pus must be evacuated for the purpose of revealing the local positive pressure, which may be preventing the advent to the infected area of the antibodies which are being formed elsewhere in the body. A large collection of pus with a positive pressure inside will prevent the antibodies from reaching the region where they are most required. In diphtheria the local lesion must be treated by a germicide to kill the bacilli and so prevent more toxin from being elaborated and absorbed into the system. A stone in the bladder or in the kidney will often give rise to a bacilluria. It is obviously useless to treat such a bacilluria with a vaccine while the stone is still present. 4. The proper dose and the proper intervals between the injections must be attended to, and regulated by the reaction produced."

The Treatment of Persistent Diphtheria Infection by Means of Diphtheria Endotoxin. By R. Tanner Hewlett, M.D. Lond., F.R.C.P. Lond., The Lancet. In a former paper[1] Dr. A. T. Nankivell and I detailed results obtained in the "treatment" of persistent diphtheria infection by means of one or more injections of diphtheria endotoxin prepared by the Macfadyen method. There were 13 cases in which diphtheria bacilli had persisted in the throat or nose or both for weeks or months after an attack of diphtheria, and in which the bacilli disappeared after 1-3 doses of the diphtheria endotoxin. There were 5 other cases in which the bacilli did not disappear with the use of endotoxin, but the doses of endotoxin given were much smaller than in the successful series. We were inclined to believe that the use of the endotoxin is a promising means of treating these troublesome cases.

Another case of persistent diphtheria infection after an attack of diphtheria has recently been treated by me with diphtheria endotoxin with subsequent disappearance of the diphtheria bacilli. The endotoxin was the same preparation as that previously employed, and was about 2½ years old. Judging by the local reaction produced, the endotoxin kept in an ordinary cupboard, has maintained its properties but little impaired by this long keeping.

Diseases of the Respiratory System

Under Charge of

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Initial Localization of Pulmonary Tuberculosis in Children.—In the Archives de Medecine des Enfants, Paris, (Vol. XVI, No. 9, C. Leroux shows a number of skiagrams of children to confirm his claim that in infants and quite young children the initial localization of tuberculous infection is toward the base or the middle part of the lung in the majority of cases. The focus even with involvement of adjoining lymph-nodes and later of the corresponding lymph-nodes on the other side, may give no clinical sign of its presence, but it shows up on roentgenoscopy. Before the age of 2, the tuberculous process generally proves fatal, but after this age skiagrams taken at intervals during months and years show that the pulmonary affection usually passes through three phases: first there is the primary focus, then a stage of tuberculous processes in the tracheobronchial lymph-nodes, and then the apex becomes involved or there is secondary reinoculation of the apex. In older children, as in adults, the primary process seems to localize preferably at the apex; the lymph-nodes are affected only secondarily or later, but they become involved more regularly than is the case in adults. The skiagrams given show the low focus, then the phase of involvement of the tracheobronchial lymph-nodes, and finally the involvement of the apex. This is the usual course in young children. In children of 10 or more the apex is first involved and later the tracheobronchial lymph-nodes and the apical process heals in the favorable cases, and later the lymph-nodes.

Hot Baths in the Treatment of Bronchitis and Pneumonia in Young Children.—Arneth (Deutche medizinische Wochenschrift, Berlin, Vol. XXXIX, No. 39) emphasizes that air and more air is the imperative need in treatment of respiratory affections in young children. He also urges the extreme necessity of changing the position of the child every hour or so. The prone position aids mechanically in draining away the secretions as the pneumonic processes are usually most intense at the back of the lung. In treatment he has long made a practice of cold packs and baths but has changed to hot baths of recent years, finding them superior in every respect, especially for weaker children who chill readily at the surface while the febrile temperature accumulates in the center. The hot baths draw the heat to the surface, and he has never witnessed any injurious effect from their use. The higher the temperature, the weaker the child and the more defective the peripheral circulation, the more frequent the baths, up to five a day. With a temperature of 39 C. (102.2 F.) he gives the bath for ten minutes. The water is kept at 41 C. (105.8 F), adding more hot water as it cools. These hot baths are easy of application while the temperature goes down under them to a remarkable extent. The reduction is most marked in thirty to sixty minutes afterward. A temperature over 40 or 40.5 C. (104 or 105 F.) does not contra-indicate the baths for infants or very young children, but with more robust and older children merely warm baths may be preferable.

He concludes the hot bath with a cool douche for which the conditions are extremely favorable as the back f the neck and chest are intensely hyperemic so that the reflex gasp can be elicited most readily. One nurse holds the child's head with both hands, protecting the mouth and nose against aspiration of water, and raises the child out of the hot water until the back of the neck is exposed; a second nurse then dashes a dishful of cold water fresh from the faucet over the back of the neck, just once. The child gasps for breath, exerting all the auxiliary muscles. It is then laid back in the hot water The whole procedure lasts only a few moments, after which the child is dried and wrapped in warmed clothes. No after-sweating is observed and the child is ready to eat. No unfavorable action on the heart was ever detected even with much debilitated infants. On account of the excellent action in every respect of the hot baths, he continues them once a day into convalescence if the child still coughs, even when there is nothing pathologic to be detected in the lungs. He makes a practice of applying the hot baths not only in febrile bronchitis, bronchiolitis and bronchopneumonia, but also in prophylaxis in cases of nasal catarrh, only that with this he refrains from the cold douche and wraps the child warmly to induce sweating. Omitting the cold douche, he applies the hot baths also in various affections of infants, with or without fever, when the peripheral circulation is defective. Great care must be taken that the child's bed is well warmed to prevent secondary loss of heat after the bath. In conclusion, he reiterates that the hot bath with the concluding dash of cold water must be regarded as a specific method of treatment for bronchitis and pneumonia in young children. It reduces the fever, acts as a revulsive and stimulates expectoration and deeper breathing, and thus prevents or puts an end to atelectasia and stagnation of the secretions, while it has a marked soothing, refreshing and sleep and appetite promoting action and shortens the course of the disease. He gives a number of curves and tables to illustrate the effect of the hot baths.

Treatment of Diphtheric Stenosis of the Larynx.—N. I. Uspensky (Pediatria, St. Petersburg, Vol. IV, No. 5), reviews 2,760 cases of laryngeal stenosis from diphtheria; intubation or tracheotomy was indicated in 1,436 cases. Diphtheria bacilli were found in 77.6 per cent., and in sixty-eight cases the diagnosis was confirmed by necropsy, while in 135 cases the membrane was expectorated, so that in 84.9 per cent. the diagnosis was confirmed. Of the total patients, 559 or 38.92 per cent. died, while tracheotony gave a higher mortality. He does not advise too early intubation as in half of his cases the patients got along without it. The mortality rate in an epidemic does not depend on the time of treatment, but rather on the age—the older the children, the less the mortality. It was highest in infants less than a year old. In such young infants intubation is to be preferred; it gave 37.4 per cent. recovery, while only 4.2 per cent. recovered after tracheotomy. Repeated intubation was necessary in 40.8 per cent. during the first hour that followed the extubation: in 91.1 per cent., it was necessary during the first twenty-four hours. Each patient was intubated on an average; 1.96 times. The best time for removal of the tube is the end of the second and beginning of the third day. The intubation shortens the average duration of the disease: in 51.4 per cent., the course was less than two weeks. With primary tracheotomy it was more than three weeks in 61.1 per cent. When intubation for any reason cannot be done, tracheotomy is of great service: otherwise intubation should be preferred, even at the risk of causing a contact ulceration in the air passages. He never had gangrene develop in children above 2 or3 years of age, and, in these there seemed to be no relation between the duration of the stay of the tube and the gangrene. The mortality of children with membranous croup depends on the involvement of the respiratory organs. Pneumonia developed after primary tracheotomy in 67 per cent.

Operative Treatment of Pleural Empyema in Children.—Warner (Deutsche Zeitschrift fur Chirurgie, Leipsic, Vol. CXXIV), reports 178 cases of pleural empyema in the last ten years. The mortality was only 11.5 per cent. in the sixty-one idiopathic cases while it was 21.1 in seventy-one following pneumonia; 33.3 per cent. in the six measles cases, and 38.5 per cent. in the thirty-nine scarlet fever cases. The mortality was the highest with mixed staphylococcus and streptoccus infection. In regard to age, the mortality was 28.6 and 48.1 per cent. in infants up to 1 and 2 years old: it dropped to 19.6; 11.3, and 18.2 per cent. at the ages up to 5, 10 and 15. The operation was generally resection of one rib and drainage; the mortality after this was 15.9 per cent., while it was 17.8 per cent. in twenty-eight cases in which two ribs were resected. The balance is all in favor of the lesser intervention; healing was complete in only sixteen days in one case.

Pertussis and Its Treatment.—Ochsenius (Therapie der Gegenwart, Berlin, Vol. LIV, No. 11), was impressed with the fact that whooping-cough in its early stages presents merely the picture of infection of the upper air passages, pharyngitis, with or without coryza. Aiming to prevent the spread of the infection downward, he paints the throat with a 2 per cent. solution of silver nitrate and in eighty-four of the ninety-five children to whom he has applied this measure in a thorough fashion, the effect as most excellent. The caustic action not only prevents secretion of mucus and thus wards off coughing spasms from irritation, but it has a most valuable effect on the child by suggestion. In the few cases in which this treatment seemed to fail, the children were all types of the exudative diathesis. He makes the application on alternate days, for infants every day at first, plus hydrogen dioxid. The result of the treatment was that by the end of the week the number of spasms was about the same but they were much less severe and there was much less secretion, and gradually the spasm became merely an ordinary cough.

Surgical Diseases of Childhood.

Under the Charge of

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Pyloric Stenosis in Infants.—Dr. Randolph Winslow of Baltimore (before the Southern Surg. Asso., N. Y. Med. Jour.) offered interesting data of distinct diagnostic and pathological value in the development of radiography by means of the bismuth meal before and after operation. Autopsy reported and operation protocols were uniform in their description of a pyloric tumor which was always present, hard and free from adhesions to surrounding parts. The whole pyloric stem was thickened and in cases of long standing the stomach might be dilated and its walls hypertrophied. On inspection the pyloric thickening was found to be due almost entirely to an enormous development of the circular muscle fibers, an increase in both size and number. The lumen varied, but in marked cases with diffiiculty admitted the finest probe. The etiology was purely speculative, the two leading views being, first, that it was a congenital anomaly which progressed after birth, and, secondly, that there was some primary irritation with consequent spasm and hypertrophy. Kaupe, in 1909, after a careful study of three hundred and forty-six articles bearing on this point, concluded that the etiology was still a mystery. The clinical picture was well established and so characteristic that, having seen one typical example, a second was not likely to be overlooked. The diagnosis in his second case was made by the Sister who had observed the first in its hospital course. Nearly all were described as having been healthy at first: eithty per cent. boys, and the majority first born and breast fed, although Rammstedt had recently reported an operative case which was the third child in one family to have the same condition. In many cases a hard tumor could be palpated at the site of the pylorus, with this observation varying with different reporters from twenty-five to seventy-five per cent. He could not definitely feel a pyloric tumor in any of his three cases examined without an anesthetic. The diagnosis could usually be made on the above signs and symptoms; but it must be remembered that these varied with the degree of stenosis and that in consideration of the treatment, pyloric pasm without stenosis should, if possible, be excluded. The bismuth radiograph was of great assistance in the differential diagnosis. Surgically, various procedures had been used, such as pylorectomy, divulsion, pyloroplasty, and gastroenterostomy. It was generally conceded that pylorectomy was too formidable. Divulsion offered evident difficulties. The ordinary pyloroplasty was unsatisfactory because of the unyielding structure of the pylorus, and Finney did not consider his operation applicable. In this country posterior gastroenterostomy had been so universally employed as to be looked upon as the operation of choice. Dr. Mitchell, after considering at length the statistics of either medical or surgical treatment, stated that his own experience had been limited to three cases. All came to operation early, only one having reached any degree of emaciation, weighing five pounds, six ounces, a loss of over three pounds since birth. Two were operated at seven weeks and the third at six weeks of age. A Posterior gastroenterostomy was done in each instance. The pylorus always presented the typical stony hard, olive shaped tumor with apparently occlusion of the lumen. They were now healthy, normally developing children, three and one-half years, two and one-half years, and eight months after operation. Dr. Mitchell had been able to secure a radiograph of the second case which showed, after two and one-half years, that bismuth was leaving the stomach through the stoma and none by way of the pylorus.

Congenital Atresia of the Esophagus: An Operation Designed for Its Cure.—H. M.Richter, Surgery, Gynecology, and Obstetrics, states that the site of the atresia is on a level with the bifurcation of the trachea. There is a complete separation of the two segments of the gullet. The upper segment ends below as a dilated blind pouch, behind and just above the tracheal bifurcation. The lower segment joins the stomach at the cardia in the usual manner. The essentially fatal factor in the anatomy consists in a communication between the upper end of the distal segment and the trachea or bronchus, allowing a free communication between lungs, gullet, and stomach; forced respiration, as in crying, etc., distends the stomach; attempts at vomiting fill the air passages with stomach contents (secretions), resulting in drowning (cyanosis). The symptoms begin immediately after birth and may be summarized as follows: 1. Everything taken regurgitated at once, beginning with the first attempt at feeding; 2, continuous discharge of saliva and mucus from mouth; 3, spells of cyanosis at frequent intervals, especially brought on by feeding; 4, the abdomen distended by crying and coughing; 5, difficult respiration, marked inspiratory retraction of chest and abdomen; 6, passing catheter into the esophagus discloses a complete block at from ten to twelve centimeters from the gums, at the bifurcation of the trachea; 7, an early rise of temperature with cough usually indicates the development of pulmonary involvement from the constant regurgitation of fluids from below. The plan of operating is closure of gullet at the tracheal junction by the transthoracic route and gastrostomy. The technic consists of a preliminary gastrostomy under ether; intubation of the lower segment of the gullet from below with a metal sound; change to positive pressure, using ether anesthesia; incision into the right sixth intercostal space about Two inches long, the posterior end carried upward and the sixth, fifth and fourth ribs cut across near their angles; retraction of the ribs gives a perfect view of the field of operation; a silk ligature carried around the gullet, using the sound as a guide; intrapulmonary tension raised until lung came to chest wall, when remainder of wound was closed. Senn's gastrostomy is now completed and water is immediately given through the tube.—New York Med. Jour.

Ulcer of the Stomach in Children Before Puberty.—Dr. Charles D. Lockwood, of Pasadena, Cal., stated before the Western Surgical Association, (New York Med. Jour.) that ulcer of the stomach in children was relatively rare, but probably much more frequent than heretofore believed. Many obscure abdominal conditions in children might be due to unrecognized ulcers. He had made a careful review of the literature, and a number of unreported cases had been discovered through personal correspondence with the members of the Western Surgical Association, other surgeons of large clinical experience, and Children's Hospitals of the United States and Canada. The rarity of ulcer in children was explained by the position of the child's stomach, permitting rapid emptying, the small amount of hydrochloric acid present, and the good motility. The factors favoring ulcer were malnutrition, tuberculosis, burns, local injuries, leucemia, septicemia, anemia, and chlorosis in young girls, and follicular gastritis. Ulcers in children were more often superficial erosions. The typical funnel shaped, deep ulcer found in adults was rare; when present, it was not so often found in the pyloric region and perforation was common. Perforation had been reported oftenest through the posterior wall, through the lesser curvature near the cardia, and through the greater curvature into the pancreas, as in his own case. Gastric ulcer should always be thought of in children with abdominal symptoms. Pain in the epigastrium, hemetemesis, and bloody stools were pathognomonic. The two latter were usually absent. Pain, worse at night and indigestion were usually present. Diagnosis must be confirmed by microscopic examination of stomach contents and stools, for concealed blood. Appendicitis was most often confounded with ulcer. In his case, palpation of the epigastric region during a paroxysm of pain had first suggested ulcer. Gas could be felt to gurgle through the pylorus, followed by relaxation and relief of pain. This was believed to be an important diagnostic sign.

Appendicitis with Localized Abscess.—Dr. Van Buren Knott, of Sioux City, Iowa, advocated before the Western Surgical Association (New York Med. Jour.) the removal of the appendix at the first operation in every case of appendicitis with localized abscess. In a series of 501 consecutive operations for appendicitis with localized abscess, the appendix was removed at the first operation; there occurred six deaths. One patient, a little girl aged four years, died thirty-six hours after operation, the course of death being unknown, as it occurred at home in the country, some distance from the hospital. A man aged forty-nine years died sixteen days after operation from cardiac thrombosis. A boy aged seventeen years died four days following operation from septicemia. Another patient, a woman aged thirty-one years, died six days after operation from septicemia. A man died twelve days following an operation, from postoperative obstruction, further intervention being refused. The sixth patient, a man aged twenty-four years, died from secondary hemorrhage the third day after operation. The ages of the patients included in this series ranged from ten months to eighty-four years; there was no death from peritonitis. As it was the fear of inviting peritonitis by the free separation of adhesions during the removal of the appendix which seemed to deter many operators from an attempt at such removal at the primary operation, the result secured in his series had removed practically the only objection to the removal of the appendix in abscess cases. By this procedure the tendency to postoperative complications, including obstruction, subphrenic abscess, pylephlebitis, empyema, hepatic abscess, etc., was greatly lessened. During the separation of adhesions many small localized pus collections were often found which would have been otherwise overlooked. Thus was disclosed the reason for many a secondary operation, which was often, improperly, called a secondary abscess. The mortality of operations for appendicitis with localized abscess had by this method been reduced from eight per cent. to one and two tenths per cent., and, in the hands of men who were qualified to operate in acute suppurative conditions within the abdomen, not only would mortality be lessened, but convalescence was shortened and the tendency to postoperative sequelæ much diminished.

Hydrocephalus Internus: Lumbar Drainage by Utilization of a Meningocele Sac as a Drainage Tube.—Dr. Herbert P. Cole of Mobile, Ala., (before the Southern Surgical Association of N. Y. Med. Jour.) stated that the investigations of Leonard Hill disclosed the regulation of cerebrospinal pressure to be due to the venous and lymphatic circulation. The routes of communication, five in number, between the intra and paracerebral spaces, offered numerous paths for drainage in the event of obstruction to one or more routes. Surgical treatment of hydrocephalus internus, instigated by the failures of medical treatment, dated its inception with the earliest days of surgery. Unfortunately only callosal puncture as advocated by Von Bramen, drainage into the longitudinal sinus after the method of Pays, and the combined subarachnoid and aspiratory procedure of Pussep seemed to be based on a clear interpretation of the anatomical and pathological problems to be dealt with. Numerous other drainage methods to the ventricles direct had been discarded so frequently as to indicate that as yet the operation route of choice had not been obtained. Various surgeons had advocated drainage of suitable cases through the spinal route. Of the different methods that of Cushing seemed to meet with enough success to encourage safe experimentation with this method. By a meningocele sac formed above a spina bifida he attempted to drain a case of hydrocephalus internus through the sac into the lumbar muscles. The case demonstrated that such a drainage would be maintained and was maintained for two weeks without leakage and with relief of the pressure symptoms. The child died on the twenty-sixth day of obstruction in sac. The author concluded that a knowledge of the normal drainage routes was essential to surgical drainage in these cases. Lumbar drainage in suitable cases seemed to offer a better field of experimentation as it was easy of approach and a cleaner field for repeated operations. Drainage by the spinal route might be either subperitoneal or intramuscular. A meningocele sac might be used for a drainage tube, but should be supplemented by an intrasacular firm tube drain. The tender age of the subjects, usually with grave destructive cortical lesions and attendant malnutrition would ever hold the surgical treatment of this condition one of alleviation rather than cure.

Causes of Disappointment Following Removal of Tonsils and Adenoids.—William Wilson (British Med. Jour.) says that, in children suffering from adenoids, a mass of adenoid tissue will be found occupying the regoin just behind the Eustachian orifices and pressing more or less on the posterior portion of the Eustachian cartilage. This growth is not recognized and is not removed, so that deafness often remains, owing to the inability of the muscles to open the orifice of the Eustachian tubes against the resistance of this adenoid mass. This mass should be sought in every case and, if present, removed by using the smallest ring knife or Mackie's curette. Many failures also are due to neglect to examine the nose to determine the condition of the turbinates. Hypertrophy of the posterior portion of the inferior turbinates is very common in adenoids, and, if not removed, causes great obstruction to respiration and increases the tendency to deafness. Septic infection or hypertrophy of the lingual tonsil is frequently overlooked and is the cause of persistent throat cough. Deviation of the cartilaginous septum of the nose is often present, and should be corrected in order to secure a satisfactory final result. The aftertreatment of these throat cases is no less important than the primary operation and should include breathing exercises every day, weekly politzeration for six weeks or more, and dental apparatus designed to correct the norrow palatal arch.

Primary Epithelioma of the Nipple in a Girl Aged Eleven.—By Wm. Henry Battle, F.R.C.S. Eng., surgeon to St. Thomas's Hospital; and B. C. Maybury, M.B., B.S. Lond., M. R. C. S. Eng., The patient, a girl aged 11, was admitted to St. Thomas's Hospital on June 8th, 1910, under the care of Mr. Battle, with a ten weeks' history of attacks of pain in the left nipple. Shortly after the commencement of the pain the nipple was found to be somewhat larger than on the other side. Treatment consisting of hot fomentations was carried out in the outpatient department four weeks previous to admission; on one occasion the nipple was incised but no pus was found.

On admission the left nipple was found to be enlarged to about the size of a small hazel-nut. Superficially the tumour consisted of a layer of horny material, covering the deeper portion which was of softer consistency. There was no infiltration of the subcutaneous tissues, and the tumour was not adherent to the deeper structures. Pain of a stabbing character was produced on palpating the tumour. No enlarged glands were felt in the axilla.

The first operation was performed by the house surgeon, Dr. Maybury, on June 17th. The tumor, together with the subcutaneous tissues down to the pectoralis major, was removed by two elliptical incisions made above and below the nipple and half an inch away from it. Bleeding points were ligatured with catgut, and the wound was closed with salmon-gut. The report from the clinical laboratory was "squamous-celled carcinoma."

The patient was readmitted six weeks later with a soft, painless, polypoid excrescence of about the size of the original nipple growing in the scar. One gland was felt enlarged in the axilla under cover of the pectoralis major. On July 22nd the second operation was performed by Mr. Battle. Two elliptical incisions were made giving the scar a wide berth, and the granulation growth, axillary glands, and sternal portion of the pectoralis major were removed. The report of the clinical laboratory was: "The scar shows chronic inflammation with giant cells around ligatures. Glands normal." There is at the present time no evidence of recurrence.

Orthopedic Surgery

Under the Charge of

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Congenital dislocation of the hip: A Rational Method of Treatment.—By Harry M. Sherman, Surg., Gym., and Obstetrics, Jan. 1914.

The following difficulties may be encountered in the replacement of a congenitally dislocated hip; an incompetent acetabulum, an imperfect femoral head, a shortened or distorted femoral neck, and an elongated and narrowed capsule.

An incompetent acetabulum, shallow and lacking an upper rim, cannot be altered, it should not be excavated least epiphyseal growth, be interfered with. Complete incompetence may cause failure in reposition or may cause reluxation.

A stunted and deformed femoral head likewise cannot be altered but must be used as it is.

The femoral neck is usually long enough but it is commonly misdirected, forwarded by a trust in the femoral shaft, this may be connected.

An elongated and narrowed capsule is the real obstacle to reposition, often the lumen is so small that the femoral head will not pass through it; and, consequently, if the head is placed in the acetabulum, the thigh is then extended, abducted and rotated inward acetabulum.

The author employs the following method of operation, an incision is made downward from the anterior superior spine, the capsule of the joint is incised in the line of the skin incision, the hip is flexed to relax the capsule and a finger is placed within the capsule and is passed inward until it encounters the constriction, a long straight probe pointed bistoury is guided by the finger through the narrow part of the capsule and the constriction is cut though in its lower portion. The femoral head can now be lifted into the acetabulum, the tigh is then extended, abducted and rotated inward and the knee is flexed. The long head of the rectus is thus drawn tight over the femoral neck and prevents reluction, the incision in the capsule is not sutured, the wound is closed and the limb is dressed in plaster, the cast is removed at the end of four to six weeks.

If there is a twist in the femoral shaft that throws the head forward, a subcutaneous osteotomy is done just below the trochauters, nail and limb and the lower fragment is isolated forward while the upper fragment is held in internal rotation by a long nail driven into it between the trochauters. Nail and limb are dressed in plaster, the nail is removed at the end of four or six weeks. Successive casts or splints are applied for a year while the patient is allowed to walk in the cast at the end of the first three months.

Sherman reports his statistics of this operation which shows 41 per cent. of success in twenty-nine cases where the reduction by incision was made without the subsequent osteotomy, and 70 pr cent. of success in twenty-seven cases where the reduction was combined with the osteotomy.

Simple Spinal Curvature: Its Treatment and Cure.—By Keppel, the Med. Council; Feb. 1914. By simple spinal curvature caused by improper action of the muscles of the body. The chief cause of curvature in children, is the faulty lighting and heating found in the public schools, and the habit of carrying a heavy load of school-books under the same arm. Also when children study at home they usually assume faulty positions that curve the growing spine. In adults curvature is often caused by occupational positions, and by the faulty dress of women. A more or less constant strain in any direction will finally tire and stretch the working muscles on the convex side of the curve; a well fitting strain will relieve this strain upon the weakened muscles, but exercises also should be employed to straighten these muscles. For the ordinary simple curvature a brace is usually not required. The patient should take the prescribed exercises before a mirror in order to do them correctly. The author gives a brief system of exercises by which all the muscles of the neck and especially the weakened muscles are straightened, at the same time the cause of the curvature and the faulty position should be eliminated.

The Inlay Bone Graft as a Treatment of Ununited Fracture, A Report of Fifteen Successful Cases.—By Albee, American Jour. of Surgery, January 1914. The author believes that Lane plates other internal metal splints are a hindrance in securing bony union in ununited fractures of long standing. In recent or fresh fractures the problem is an entirely different one. Fixation is all that is required, as the osteogenetic is active. Therefore, on these cases the Lane fixation plate fulfills the requirements, but in old ununited fractures there is a complete or almost complete loss in diminution of osteogenetic function in the ends of the bone, this condition may be present from one to several inches from ends of the bones. To secure union it is necessary to stimulate osteogenesis, make an osteogenetic scaffold between the bones, and secure fixation. A properly inlaid bone graft is the only means of securing these conditions.

The author cuts with a twin circular saw a piece from the bones that penetrate the medulla. The piece of bone is lifted out after its ends are cut loose with a narrow osteotome. A piece of bone of the same size is then cut from the tibia. The length of the inlay depends upon the bone fractured and upon the nature of the case, usually it is three or four inches long. The inlay is then put in place of the piece of bone removed and is held in place with kangaroo tendon sutures, the graft is kept from slipping lengthwise out of place by a tongue and groove fitting at the ends.

In fifteen cases this method of treatment has been successful in all, the technic is rendered possible only by the use of the motor circular saw.

BOOK REVIEWS

Some Neglected History of North Carolina, being an account of the Revolution of the Regulators and of the Battle of Alamance the first battle of the American Revolution by William Edward Fitch. M,D., First Lieut. Med. Res. Corps, U.S.A., Author "Some Things the Colony of North Carolina Did and Did First in the Founding of English Speaking America;" "The Origin Rise and Downfall of the 'State of Franklin' under her first and only Governor, John Sevier. Member of the Connecticut Society of the Cincinnati; the New York Society of Colonial Wars; the New York Society of the Founders and Patriots of America, and the Washington Continental Guard. Second edition, 12 mo., pp. 308, fully illustrated, handsome buckram bindings, price $2.00, published by the Author, 355 West 145th Street, New York City.

Dr. Fitch has wisely called his book "Some Neglected History of North Carolina," and one cannot read it without seeing the wisdom of the title. The work contains numerous historic events in the early provincial and colonial history of North Carolina hereto unrecorded, and one will be surprised at many of the remarkable historic events which the author depicts and substantiates by authority.

Many of the sketches and incidents which Dr. Fitch relates are original. His book constitutes a most valuable addition to American History, covering as it does a much-neglected phase of our national birth. The Battle of Alamance and the Mecklenburg Declaration of Independence were momentous events, and were largly instrumental in achieving the Independence of the United States.

The work is interspered with historic events prior to and after the battle, which are interesting to the student of history. The organization of the Regulators, their meetings and petitions are recorded, their attitude towards the Governor is clearly set forth in a petition of over five hundred signers. A few incidents of extortion at the hands of sheriffs and county officers are mentioned; one instance where the sheriff sells a homespun dress from off a woman's back to pay her husband's taxes; another where the county clerks charged as high as three and five pounds sterling for marriage licenses, which the people could not afford, and took each other "for better or worse" without law or license.

The Author depicts the rebellion of the colonists to the Stamp Act in 1765, when the people with righteous indignation forcibly prevented the landing of the King's Stamped Paper within the borders of the province of North Carolina. He says: "Eight years after this the "Boston tea party" took place, which has been heralded by historians as a great daring deed, while the former, of much greater import, goes unmentioned."

The Author in describing the Battle of Alamance fought in 1771 says: "The struggle for American liberty and independence, which began at the Battle of Alamance, was a momentuous event in the great drama of the world's history which led up to the signing of the Mecklenburg Declaration of Independence." According to the Author, the "Battle of Alamance" was the first battle of the American Revolution, and here was kindled the flame, though small in the beginning, yet Vesuvius-like, spread with the rapidity of a wild forest fire, until the oppressed of the thirteen colonies were aflame with a determination to throw off, for ever, the yoke of British oppression.

Dr. Fitch has written a valuable contribution to the history of the early colonial and revolutionary period of North Carolina. It is a book that every lover of true history should read. The author's intimate knowledge of his subject and his store of historical facts and the judicial manner in which he handles disputed historical questions assures the reader that he knows what he is saying. It will prove strangely stirring reading to those unacquainted with the Southern History. The author seems to have entered into that period and writes like a contemporary. It is a genuine contribution of great historical value, illustrating the heroism and glory of North Carolina patriots. From a literary standpoint the excellence of the text is beyond criticism. The author writes in a strong forceful style and spirit which gives the work a fascination that compels you to forget all around you and read page after page.

This book will have wide reading everywhere particularly among students of early history in North Carolina. Its Author, a native of the "Old North State," has given much time to historial research and written several books of historial value on the Colonial and Revolutionary period of North Carolina.

—News and Observer, Raleigh, North Carolina.

Diagnostic Methods. A guide for history taking, making, of routine physical examinations and the usual laboratory tests necessary for students in clinical pathology, hospital internes, and practicing physicians, by Herbert Thomas Brooks, A. B., M.D., Professor of Pathology, University of Tennessee, College of Medicine, Memphis, Tennessee, second edition revised and re-written, Price $1.00, St., C. V. Mosby Company, 1914. St. Louis, Mo.

This little work on diagnostic methods very carefully outlines the methods of history-taking and the technique for a thorough physical examination of the patient, and gives simply, but accurately the essentials in arriving at the diagnosis. Chapters are incorporated explaining methods for thorough examination of the sputum, urine, gastric contents, blood, serous fluids, intestinal contents, tuberculin in diagnosis, the Wasserman reaction, Complement fixation tests for gonorrhea, and closes with the chapter "Apparatus and Chemical Reagents necessary for a physician's laboratory."

Every possible care has been observed by the author in bringing this little guide up-to-date, which is absolutely reliable for physicians and students in making laboratory tests. If the physician or the student follows the rules laid down he will be able to perform the test accurately and will be very materially assisted in coming to an accurate diagnosis.

Surgical Diseases of Children. A modern treatise on Pediatric surgery. By Samuel W. Kelley, M.D., professor of diseases of children, Cleveland college of physicians and surgeons; Surgeon-in-chief, Holy Cross Home for crippled children; pediatrist, St. Luke's Hospital, and City Hospital, Pediatrist and Orthopedist, St. Clair Hospital, etc., Cleveland, Ohio., second edition revised and enlarged, 761 pages, 295 illustrated, cloth bindings, express paid $5.00 net, New York, E. B. Treat & CO.

This work marks an important epoch in Pediatrics in this country for it is the first of its kind by an American author. Notwithstanding the great advance made in Pediatrics the past few years, the surgical side, as a whole, has been somewhat neglected for few surgeons have devoted the necessary time to acquire the technique of the successful pediatrist. It is true of surgical as well as medical pediatrics that some disorders are found at no other time of life, while many others "present different pathological phenomena, run a different course, require different treatment and arrive at a different result from what would be usual in the same disease in the adult."

In this second revision considerable new matter, such as will likely have permanent interest and value is added. A few subjects have been rewritten, and more than 100 emendations may be mentioned: Transfusion with Brewer's tubes, arthroplasty, motion after dislocation and other joints injuries, anomalies and deformities of the skull, Abbott's method for scoliosis, tonsillectomy, fistula and cysts of the neck, Cook's operation for relapsed club-foot. Alterations have been made mainly by insertions and condensations so that there are only 25 more pages in the entire book. A number of notes have been placed in the form of an appendix, with appropriate reference numerals in the main text. He has adhered to the plan of avoiding statistical arguments as too cyclopedic for the scope of this work, and has introduced case reports only where the concrete example would serve better than a general statement to present the subject

Dr. Kelley gives special attention to Surgical Pathology of the developing period, a most important subject to the surgeon. The chapter on Hernia, is well up to the present teaching, he devotes considerable space to orthopedics, syphilis, tuberculosis, surgery of the lymphatics, of the air-passages, of the abdomen, the rectum, and anus, and the geni-to-urinary organs, are fully covered.

It is too often true that surgeons unused to the handling of children frighten them with his lack of skill and is tempted to make a hasty and superficial examination. This Dr. Kelley takes up most carefully in the first chapter on examination and cease taking, and wisely remarks that as to the personal examination of the infant or child, "although the surgeon should have a methodical plan, it by no means follow that he can take the steps of his examination in the order he had planned. He should be prepared to begin at either end or any place in his list, or to vary his program instantly, according to the behavior of the patient."

Dr. Kelley has produced a valuable work on the surgical diseases of children bringing together in one volume, which heretofore one has had to search the whole literature, to find. The author presents this information from the standpoint of the pediatrist, keeping the treatise as closely as possible to the surgical field. The work gives evidence of a great deal of experience and common sense, and impresses one with its completeness and up-to-dateness. The illustrations are remarkablely good and mostly original with the author, the text is in good style, the index very complete, the work is essential not only to the surgeon, but to all who treat diseases of children.

Pyorrhea Alveolaris.. By Frederick Hecker, B.Sc., D.D.S., A.M., M.D., Member of the Academy of Science of St. Louis, Mo.; consultant at Bell Memorial Hospital of the School of Medicine, University of Kansas, Dosedale, Kansas; Consultant at St. Margaret's Hospital, Kansas City, Kansas; illustrated. Price $2.00. St. Louis Mo.; C. V. Mosby Company, 1913.

The opinions as to the cause and treatment of pyorrhea are as diverse at the present time as they were many years ago. The most common belief of the dentists is that the disease is a local process. The author, after careful observation covering a number of years, does not agree with this theory, but believes that disease is a result of constitutional and exciting causes which lower the vital resistance of the alveolar process, gum, and the peridental membrane. The author believes and teaches that Pyorrhea results from the diseased conditions of the gums and his demonstration in this little volume carry conviction. He believes that it is a disease which is amenable to treatment by men of the healing art. In the chapter of the pathology of this subject the author devotes special attention to the administration of an antogenous vaccine treatment for Pyorrhea. The frontispiece which accompanies this little volume shows the artificial production of a case of pyorrhea in a guinea pig, this is the first time in the history of medicine or dentistry this has been accomplished and recorded. This is a volume that we can cheerfully recommend to both physician and dentist.

PEDIATRICS

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EDITORIALS

THE VENTILATION OF ROOMS AND SCHOOL ROOMS

In the rearing of healthy children good ventilation plays an important role. In connection with this matter it is somewhat curious to note how views as to the best methods to obtain a supply of fresh air in rooms have changed recently. It is but a short time ago when the chemical composition of the air indoors was thought to be the factor which chiefly influenced health. So many cubic feet of space were allotted to each child in the public school in order that such child might have a given quantity of comparatively chemically pure air to breathe. To day these views are practically overturned and elaborate methods of ventilation have fallen into disrepute. For some considerable time it has been felt by those endowed with a keen sense of smell, that in those places in which the latest methods of artificial ventilation were installed there appeared to be a marked lack of really fresh air. In spite of the fact that persons with thus sensitive olfactory organs were assured that these organs must be at fault as the ventilating system was theoretically perfect, yet in truth they were more to be relied on than scientific theory. Mr. Leonard Hill, an English Medical Scientist was one of the first to point out that the up-to-date ventilating system was based on wrong premises. In an address given at the annual meeting of the British Association two years ago, Mr. Hill showed that there are three properties of air which have nothing to do with its chemical purity, temperature, movement, and humidity, although on physiological grounds all these influence the mind and body. For example it is well known that those who live in a dry cool atmosphere feel more energetic, by far, than those who live in a still, hot muggy air. Conditions of this kind react on the whole metabolism and aid or hinder its ventilation. This explains why the races who live in temperate climates, are more active and enduring than those who inhabit the tropics. A similar argument holds good with regard to the air of rooms: movement and humidity, according to Hill, are the important factors of the air; heat is less felt when there is a breeze and per contra cold is intensfied in proportion to the movement of the air. Movement cools the air, by promoting evaporation, but this is not the only effect. It acts on the nerves of the skin and thus affords a stimulus to the nervous system. This is partly the reason for the new success of openings which admit air to a room by which the air does not directly reach the skin. In short, Mr. Hill declares that the chemical purity of the air is more or less of a negligible quantity and that movement and humidity are the only features which require to be seriously considered. Many authorities have stated their belief that the open window is after all the best means of ventilation and the success of bringing up children as much in the fresh air as possible seems to prove that these opinions are correct. Mr. Walter M. Roach, writing to the Medical Record, March 7, on the good results obtained by the open window schools in Philadelphia ends by saying: "I am convinced that cold fresh air is more stimulating to mind and body than air generally found in school rooms heated to 65 degrees to 70 degrees Fahr."

In the bringing up of children, the nursery, the bed-room, the living room, and the school room should all be freely ventilated by day, and by night, by the open window. American children are too much reared after the fashion of hot house plants, and as a matter of fact throughout the country, rooms, offices, places of public gathering, are invariable overheated. This is not in accordance with nature's laws, and especially so far as children are concerned. Fresh air is the best tonic known for anemic, undersized, or undeveloped children, and they should not be deprived of the most efficient mode of building up their system.

IMPROVED METHOD OF VACCINATION.

Vaccination from the time of its discovery has been performed by scarifying a spot on the arm and applying the vaccine lymph. This method of application has brought forth vigorous protest from the child and sometimes the adult about to be vaccinated. I should think that the improved hypodermic medication would have regulated this cruel and barbarous method into oblivion. In the daily press every now and then we read of cases of blood poisoning or tetanus, caused, it is said by impure vaccine. No one has criticised the technique of vaccination but the vaccine itself. The manufacturer of vaccine is hedged with so many precautions both by the government and local health boards that such a thing as impure poisonous vaccine is impossible, so that any accidents occurring after such a trivial thing as vaccination is a crime which may be led to the door of the physician who vaccinated such a case. Usually the anti-vaccination societies make great capital of such accidents.

The principle of vaccination is to inoculate the patient with cow pox lymph which produces in the patient the same symptoms as in the animal and renders him immune to small pox, therefore why not inject the lypmh subcutaneously or intravenously and avoid the dangers of infection from clothing or undue handling with soiled fingers?

The method used by the writer is to dilute the glycerinated lymph with 5 or 10 minims of sterilized saline solution, place it in a syringe and inject it in the arm, if it is an adult, or between the shoulder blades in a child or in the gluteal region. The skin is previously sterilized by painting with tr. iodine, a fold of the skin is lifted between the thumb and forefinger and the needle inserted with a quick motion. The inoculation is performed before the child or adult has had a chance to make any resistance.

It is a cleaner, more aseptic and a manifestly more scientific way of vaccination and the result is fully as good although not as spectacular as scarification. The reaction occurs locally as well as constitutionally, is evidenced by slight tenderness and infiltration, at the site of the injection, enlargement of the lymphatics and slight elevation of temperature.

I have come across very ugly scars caused by the old method, some patients having as many as 5 or 8 scars on each arm and in some cases the scar tissue shows a somewhat malignant appearance. I have seen quite a few cases where scarification produced a Keloid. One case which occurred in Austria became infected with syphilis by being sacrificed with the same needle that had been used on a syphilitic patient. Such careless methods of vaccination still prevail on board ships where the overworked medical practitioner must vaccinate several hundred emigrants before landing.

I believe it would only be fair to revise the sanitary codes making it obligatory to use the hypodermic needle. The hypodermic method leaves no scar to be scratched over with soiled finger nails. A drop of colodion placed where the needle entered seals the spot and there is no need of vaccination shields, adhesive straps and sore arms and the risk of septiceamia or tetanus.

Vaccination performed by this method is free from criticism. It is bloodless, so inocuous that even the most rabid antivaccinationist will submit to it.

EMILE BRUNOR, M.D.

MEDICATION BY RECTUM IN CHILDREN

The difficulty in giving intravenous injections to children, the intense pain following intramuscular injections, has stimulated research work in the administration of serums and arsenicals by rectum.

These researches may be summed up in the following conclusions:

1—Serums or antitoxins in the rectum remain inactive. This is the opinion of Dr. Lesne & Dreyfus (Soc. de pediatric, Jan. 14, 1913) based on clinical and experimental work.

They claim that the rectum is permeable to heterogenous albumins, but that the toxins and anti-toxins introduced in this fashion remain innocuous even in massive doses. It seems that the liver side tracks them and then they undergo a transformation. Whatever may be the value of this explanation as to the mechanism of absorption, nevertheless these researches are of vital interest. We can therefore give up the rectal route in administering anti-toxins either as a preventive or curative measure.

2—Organic arsenical compounds are absorbed very slowly. Dr. Weil. A. Morel and G. Mourignant (Archives de med. des enfant, July 1913) have demonstrated the presence of arsenic in urine and appreciable amount of arsenic in the liver of a dog who was given an enema of salvarsan.

3—Clinically they also gave enemas of salvarsan to children suffering with hereditary syphilis and noted a favorable influence on the late manifestations of hereditary syphilis, but they recognize the slowness of absorption of 606. They also found it useful in chorea. So from a practical standpoint this method may be used in children but should be used in cases which do not require massive doses.

4—Lesne (Soc. de pediatrie, Oct. 14, 1913) has recommended the use of artificial serum with salt or glucose, according to Murphy's method, or drop by drop. The rectum just as rapidly as the subcutaneous cellular tissues absorbs and the slow injection or enema has all the advantages of the hypodermic method without its disadvantages. Toleration is perfect and diarrhoea is no contra indication.

Artificial serums given by rectum are absorbed very rapidly.

EMILE BRUNOR, M.D.

ENLARGEMENT OF THE AXILLARY GLANDS SYMPTOMATIC OF ACUTE PURULENT PLEURISY

It may be truthfully said that every year a certain number of children and even adults die with an unrecognized purulent pleurisy And yet there is, according to Dr. Piolle, of Bohain, a sign which is present in every case, even at the beginning, and which enables to say positively whether or not there is purulent pleurisy.

Whenever pus forms in one of the large pleural cavities or in the interlobar or diaphragmatic cavities there is a concomitant, well characterized hypertrophy of the antero-internal group of axillary glands on the same side.

This hypertrophy persists until the patient is cured or dies, and the glands are often very sensitive to the touch.

Accordingly, if purulent pleurisy is suspected the axillae should be examined, says Dr. Piolle. If you find that there is an unilateral hypertrophy of the anterointernal axillary glands, do not hesitate to puncture the lung at different points.

Radioscopy is no doubt useful at times, but not always; and besides it is not, as a rule, available to the general practitioner. (Archives Medico Chirurgicales de Province, March 3, 1913.)

PEDIATRICS

ORIGINAL ARTICLES

TOXAEMIAS OF PREGNANCY AND THEIR EFFECT UPON MATERNAL AND INFANTILE MORTALITY

With Suggestions as to how the Association and the Public Health Department might assist Obstretricians in Lessening the Death-rate from these and other Complications of Pregnancy and Parturition*

BY J. M. MUNRO KERR, M.D.

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My first duty, and a very pleasing one, is to thank the Committee of the "National Association for the Prevention of Infant Mortality, and the Welfare of Infancy" for the honour they have done me in inviting me to read a paper before this conference of the association.

I am particularly delighted to be invited because it brings me into association with many who have done so much to lessen infantile mortality and gives me an opportunity of indicating some further advances we might make. For, unfortunately, there is no rest for those who elect to serve under the banner of progress; they must ever march onwards and extend their field of operations.

Now I believe the time has come when those of us who are particularly interested in the welfare of the new-born must direct our attention, not only to the infant, but must look after and care for the expectant mother during her pregnancy.

As the time at my disposal is limited, I shall make no further remarks by way of an introduction, but shall at once proceed to the matter upon which I have been asked to address you.

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*Read before the National Conference Infant Mortality, London.

The subject, as you see, is a very definite one—"Toxæmias of Pregnancy and their effects upon Maternal and Infantile Mortality." For the benefit of those who do not belong to the medical profession let me explain what is meant by the "toxæmias of pregnancy." The toxæmias of pregnancy may be described as a group of complications which arise during pregnancy, especially a first pregnancy, and which are due to disturbed metabolism and an accumulation of waste material in the system of the pregnant woman.

They manifest themselves in many different ways, but I propose to consider only two which are at present admitted by all to be of toxæmic origin. As regards the others there is still sometimes uncertainty in particular cases as to how far they are genuine examples of toxæmia. The two examples I take are: (1) eclampsia; (2) albuminuria. But not only am I going to limit myself to these two examples of toxæmia, but I am going to limit myself to these diseases as I have seen them in the Indoor Department of the Glasgow Maternity Hospital. And I do this because we have in the hospital exact records of all these cases, so that I can speak of them with a feeling of certainty that they were all examples of toxæmia.

Now let us consider the maternal and infantile death-rates in these two complications.

(1) Eclampsia (Puerperal Convulsions). You will observe from the tables that during the years 1901-10 inclusive there were 293 cases of eclampsia. Of these 293 cases eighty-eight mothers died—a maternal death-rate of 30 per cent. As regards the children, 208 were born dead or died, an infantile mortality of 70 per cent. But that is not all. Several of the mothers developed chronic Bright's disease; and even amongst the children who lived, several died shortly after birth, and many were premature, poorly nourished. and started life very much handicapped. As evidence of this you observe that the average weight of the children was only 5 3-4 pounds.

Distressing as it is to contemplate such a death-roll—and remember it is the death-roll of the indoor department of one hospital—it is far more distressing to know that this terrible complication of pregnancy is a preventible disease. If these women had been properly looked after during pregnancy hardly any of them would have died, and only a very few children would have succumbed. Amongst women of the wealthy class, who are looked after during pregnancy by specialists or careful family practitioners, eclampsia is very rare, and especially rare in its graver forms.

(2) Albuminuria. But I can illustrate this best by considering the other toxæmia of pregnancy, albuminuria. Now albuminuria (albumen in the urine) is almost always present before the eclamptic seizure. It is, of course, only a symptom, but in most cases it may be safely referred to as an early stage of the toxæmia which at a more advanced stage is associated with eclamptic convulsions. If you look at the figures for albuminuria you will at once be struck by the fact that both the maternal mortality and the infantile mortality are very much lower. During the same ten years, 1901-1910, we had 121 cases of albuminuria. Amongst these cases there was a maternal mortality of 7 or 5.8 per cent., and an infantile mortality of 33 or 27.2 per cent.

Now what does this prove? It proves that if the pregnant women were treated while they have albuminuria, and especially if they were treated early, we obstetricians could save a great number of maternal and infantile lives. And mark you, we could save for the State the most valuable mothers, the young mothers who, if saved, could produce numbers of healthy children.

It is quite unnecessary to labor this point and quite unnecessary to give more statistics. Every medical man knows that if pregnant women in the poorer classes were looked after properly an enormous number of maternal and infantile lives might be saved from the dangers of toxæmia and other complications of pregnancy. Many of these complications I might refer to, such as malpositions of the child, hæmorrhages, tumors, malformations of the parturient or birth canal, all of which, if recognized early in pregnancy or early in labour, would result in an enormous saving of maternal and infantile lives.

It must not be imagined we are doing nothing for such cases. As a matter of fact we do everything we can to encourage prospective mothers to consult us at our maternity hospitals, but except when the complications have become specially serious we seldom see these women.

If we admit, and every one must admit it who knows anything about the matter, that a great number of mothers and infants are lost who need not have perished, the question naturally arises, who is to remedy this and how is it to be done?

As regards those who are to be made responsible for bringing about a more satisfactory state of affairs, I can readily understand you members of this Association and the Public Health Authorities saying that this matter of the care of pregnant women—the prospective mothers—does not belong to your spheres of influence; that we should take it up and deal with it. Now I entirely disagree with such a view. Unless the Public Health Department comes to our aid, we can accomplish very little. As illustrating how little can be done in connection with preventive medicine, unless the public health authorities take it up, let me mention two problems which might very naturally be considered as belonging to the province of obstetrics, but which were only satisfactorily dealt with when the public Health department were permitted to deal with them. I refer to infantile mortality and ophthalmia neonatorum. A great deal has yet to be done in connection with these two problems, but now that the Public Health Department has authority to deal with them, we know that they will gradually be solved just as we see other problems are being gradually solved by them. But you may say to us obstetricians, you should educate the young mothers; you should tell them about the dangers they are liable to if they are not properly looked after during pregnancy and parturition; you should print leaflets and circulate them; you should organize mother's meetings and tell them what should be done and when they should seek advice. Now I ask you who are concerned with infantile mortality, and you who are connected with the Public Health Department of the State, if you have ever found much benefit result from the circulation of leaflets? Undoubtedly they advertise the subject and the State is educated up to dealing with the matters contained in these leaflets, but until the Public Health Department obtains authority to step in and deal with the particular problems very little advance is made. Take the infectious fevers, tuberculosis, ophthalmia neonatorum; was there any appreciable progress made in dealing with these matters until notifications of these diseases was made compulsory?

We must have your help. We obstetricians must have the assistance of those organizations which are concerned with infantile mortality, and above all we must have the assistance of the public health authorities.

I have shown that there is a great number of mothers and children lost, and that there is a great number of mothers permanently injured and children born handicapped as regards health, as a result of the complications of pregnancy and parturition. I have also indicated, and I trust convinced many, that this can only be remedied by an association such as yours, and by the Public Health Department coming to our aid.

But when one comes to consider the remedy for the existing unsatisfactory conditions, there must be great differences of opinion. Today I can only give my own views on the matter. I advance my views with a certain amount of diffidence, for the problem is a difficult one, and the proposals I am about to make will, I feel certain, meet with much adverse criticism.

Well, without further delay, let me say that after the most careful consideration of the whole matter I have come to the opinion that it is essential that intimation of pregnancy should be made compulsory. Now let us consider the advantages and the disadvantages or objections to such a radical step.

As regards the advantages, I shall merely enumerate them, for they are obvious. (1) Every pregnant woman could be looked after during her pregnancy, and the complications of pregnancy treated at an early stage. (2) Proper arrangements could be made for the woman's confinement and many of the more serious complications of parturition might be prevented. (3) Arrangements for the care of the new-born could be made as regards food and clothing; many infantile deaths could be prevented, and many more children could be started in life healthy and well nourished.

I might also mention that by this intimation of pregnancy a better control would be exercised over illegitimate births and the places and manner in which they occur.

But naturally the objections concern us most, for, although no possible bodily harm could result to pregnant women from compulsory intimation of pregnancy, they would undoubtedly be put to certain inconveniences.

Now it appears to me that the first objection which will be urged against intimation of pregnancy is that the private life of the individual would be disturbed. Apart altogether from those who become pregnant although unmarried, and who naturally desire to keep the knowledge of their condition to themselves, there is a considerable number of married women who, from modesty and other feelings, desire to keep the condition secret. One has of course every respect for such feelings, but I am convinced if it were explained to a representative body of women that intimation of pregnancy would be of the greatest possible benefit to all expectant mothers, and particularly young mothers pregnant for the first time, I feel certain that almost without exception they would agree that notification was desirable.

When one looks back upon the various diseases which have become, certifiable, specific fevers, tuberculosis, ophthalmia neonatorum—as each of these has been added to the list there have been protests that the liberty of the subject was being interfered with, that the private life of the individual was being disturbed, that enormous hardships were being placed upon certain individuals. Of course the sentiments and feelings of many were disturbed, and a few may even have suffered bodily harm as well as mental disturbance. But at the present moment would anyone propose that notification of these diseases should be abolished, or that the notification of birth should be abolished? Certainly not, and remember that although pregnancy is a physiological condition, very frequently indeed at the present time from our mode of life and other causes it is not physiological, it is pathological. It may not have its hundreds of thousands of victims, as tuberculosis has, but believe me there are in this country many hundreds, yes several thousands of mothers and many more children lost who need not be lost. They are lost because the expectant mother and the parturient succumb to complications which might have been prevented, and the State is responsible for their lives in so far that it fails to make any provision for the prevention of these complications.

Naturally the women who would suffer most are those who become pregnant while still unmarried. Now every possible consideration must be extended to these women. There would be absolutely no publicity given to the woman's condition. As a matter of fact if you had women officials looking after this department much valuable aid might be given to these expectant mothers in their unhappy condition. Besides, in any case, pregnancy will sooner or later intimate itself by the birth of the child. Would it not be much better to have these women cared for in some way, and not permitted to continue concealing their unfortunate condition until the last moment, when mother and child may alike suffer from the concealment?

Another objection which might be urged against intimation of pregnancy is the uncertainty of the existence of the condition in many cases, for it is sometimes very difficult to say whether a woman is pregnant or not. Of course, there are cases of this nature, but there are also many cases in which it is extremely difficult to say whether a patient is tubercular or not or whether a child is suffering from scarlet fever or not. In such cases a diagnosis is withheld until the physician is certain of the condition. As a matter of fact in most cases the intimation of pregnancy would generally be made when the pregnancy had advanced to the sixth or seventh month, and at that stage a diagnosis is seldom difficult.

Other objections might be urged. It might be urged that the work thrown upon the doctors and public health authorities would be too great and that great expense would be incurred. I shall indicate later how I would propose to get over some of these difficulties. I believe then that the only procedure which will improve the present unsatisfactory condition of affairs is the compulsory intimation of pregnancy. Educating the people, holding of meetings, scattering leaflets abroad, is futile. Again I maintain that the prospective mother should be compelled to intimate to the medical officer of health that she is pregnant. This may be done by herself, her husband, or her doctor, but where the woman or husband make the intimation, the health department can only accept that intimation after it has been confirmed by a medical practitioner. When intimation is made the prospective mother must state whom she has decided to have to attend her confinement, whether it is to be a doctor, midwife, or an official from the maternity hospital or maternity department of a general hospital. Failure to make intimation of pregnancy must be dealt with, but I would here bring forward a suggestion made by my friend Dr. Chalmers. It is to this effect, that the insurance commissioners might be asked to insist maternity benefit would be sacrificed by those who failed to notify their condition by the sixth or seventh month of pregnancy. Of course provision would require to be made for the exceptional cases in which intimation of pregnancy was impossible.

Apart from the intimation of pregnancy the public health authorities need not exercise any supervision over the women who elect to be attended by a medical practitioner. They will include women of the so-called upper middle and more prosperous working classes. What we must legislate for is the poorer members of the community who elect to be attended by mid-wives or the officials of a maternity hospital or maternity department of a general hospital.

Let me now indicate how the scheme might be carried out, and to do so I propose to lay before you the arrangements which I think would be suitable for my native city, the city of Glasgow.

We have in connection with the Glasgow Maternity and Women's Hospital a very large maternity service; in 1912 we had 1,459 indoor and 3,001 out-door cases.

In addition we have what is termed the West End branch. This branch is simply a place of call; there is a housekeeper who takes messages and one or two nurses. All the cases in the western district of the city are attended from this branch. Now if we had southern, eastern, and northern branches, the different districts of the city would be much better served. To the maternity hospital we send all abnormal cases which cannot be properly attended in their own homes. But our hospital, even if our directors were convinced that it was desirable, cannot at present afford to establish other branches. Here then is where the public health department might be of service, for I would propose that at all of the branches there should be not only a maternity service but there should be an outdoor service for giving advice to expectant mothers and nursing mothers.

At certain hours advice should be given to pregnant women of the district who are ultimately to be attended by midwives or the out-door department of the maternity hospital. If the cases are especially complicated they should be passed on to the maternity hospital where they would be seen by the visiting physician in charge and if need be admitted into hospital.

At each branch also advice (Consultation de Nourrissons) should be given to mothers as regards the feeding of their infants, and again in any very complicated case the mother and infant should be sent either to the maternity hospital or the hospital for sick children. These branches should be made the centres for distributing milk.

My proposal then is that these branches should be administered by the public health department and officered by members of the staff of the maternity hospital and the public health department. By such an arrangement, we would have complete control over pregnant women, nursing mothers and infants.

Another use might be made of these centres. The different charitable institutions for the distribution of clothing and food to the poor could at once get information regarding needy cases.

I feel sure that with slight alterations to suit local arrangements and institutions a scheme of the nature I have sketched might be elaborated for all cities and towns.

As regards country districts with no hospitals the intimation of pregnancy would give the health authorities a control over the practice of midwives which would be greatly to the advantage of the community.

Without doubt a scheme on the lines I have indicated will be introduced some day. I trust we will not have to wait too long, for until it comes there is hope of improving the present unsatisfactory conditions.

Permit me to thank you again for the honor you have done me in asking me to read this paper.

THE NECESSITY FOR SPECIAL EDUCATION IN INFANT HYGIENE, WITH PARTICULAR REFERENCE TO THE MEDICAL PROFESSION*

BY LINNAEUS EDFORD LA FETRA, A.B., M.D.

Of New York.

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Special education in infant hygiene is a necessity, because, in the first place, the mortality among infants and young children is higher than at any other period of life. More than one quarter of the total deaths of the community occur in children under the age of 3 years. Twenty-five per cent. of infants born alive die during the first year, 7 per cent. more during the second year and 3 per cent. more during the third year; so that of 100 new-born babies more than thirty-three will be dead, under ordinary conditions, by the end of the third year. This is bad enough, for even an old man of 84 years has a better chance of living another week than has the newly-born infant. But

*Read before the National Conference Infant Mortality, London.

if we should add to these deaths the 5 per cent. stillborn, and the more than 20 per cent. of pregnancies that result in miscarriages, the figures of infant loss are simply astounding.

Instruction in infant hygiene will save babies' lives by lessening infant deaths.

A second reason for special education in infant hygiene is that the public needs and demands physicians who are well instructed in the care of babies.

In this connection must be mentioned the need of nurses trained in infant hygiene. There is an immense and growing demand for such nurses. A wave of interest in social welfare work is now spreading over the whole civilized world, and now in the United States almost every small town has its social service bureau with one or more district nurses. The principal work of the nurses relates to childbirth and infancy, including the diseases of childhood. The weakest link in this chain of philanthropy is the dearth of women sufficiently experienced in infant feeding and hygiene. Facilities must be provided for educating such women, and physicians must give this instruction.

What are the topics that should be included in such a course? An answer to this question may perhaps best be reached by first enumerating the problems to be attacked. We have, first, an enormous mortality before the normal time of birth, due to miscarriages, prematurity and stillbirths. An investigation made in Philadelphia showed that in 1911 there were 39,975 babies born; of these 2,131, or about 5 per cent., were stillborn. There were also 559 premature births in which the baby died, and there were during the same year 10,666 miscarriages. This means 13,000 dead among about 50,000 pregnancies, or over 25 per cent. Just think of the blasting of hopes, the discouragement of womanly effort, these figures imply! Something must be done to prevent this enormous loss of life before its portals are fully entered.

Secondly, we have a very large mortality during the first few days and weeks of life. The health officer of Washington has stated that in 1911, out of 957 deaths in the first year of life, 151 occurred on the first day, 130 between the first and seventh days, and 114 between the seventh and the thirty-first days; that is, 395 or about 40 per cent. of the deaths of the first year, occurred during the first month and about one-sixth on the first day. These figures were not exceptional, for in 1910, out of 1,070 deaths, 150 occurred on the first day, and in 1909 out of 1,042 deaths 140 occurred on the first day. So we can set down one-sixth of the mortality of the first year as occurring on the first day, and almost one-third of the first year mortality as occurring during the first week. This first week's mortality is not due to the milk or to the manner of feeding, but to earlier acting causes, such as hereditary weakness or disease, malformations, difficult or mismanaged childbirth and septic infection.

Thirdly, we have a large mortality during the remainder of the first year. This is due to difficulties with nutrition and to infections, particularly to gastro-intestinal and respiratory disease. Along with this mortality there goes, of course, a morbidity which is preventable to a large degree. A few statistics are of interest in this connection.

Of 10,000 infants nursed at the breast, there died during the first year of life 580; of 10,000 artificially fed babies there died 4,588, that is to say, the breast-fed baby has about nine times as many chances for life as has the baby artificially fed. This is the most important fact with reference to mortality and morbidity during the first year of life, that over 85 per cent. of the mortality occurs in babies that are artificially fed. Manifestly the most important factor in baby saving is to have the baby nursed by its own mother.

What measures must be taken to combat this waste of infant lives? To prevent the enormous premature mortality we must not only endeavor to bring about in the community the knowledge and the application of the findings of the new science of eugenics or racial hygiene, but there must be pre-natal care of the mother by the physician and nurse, with assistance from the State if necessary to prevent overwork and under-nourishment. There must also be instruction of expectant mothers and of growing girls.

To reduce the mortality and morbidity of the first year the primary consideration is maternal nursing, though properly modified milk constantly adapted to the baby's needs serves as a good substitute when breast milk is not obtainable. Nursing by the mother is almost always possible if proper care and encouragement are given to the expectant mother. In an experiment made by Dr. Schwartz in New York it was found that, among 1,501 cases, 96 per cent. of the mothers could be taught to nurse their babies for one month or less; 88 per cent. nursed their babies for three months, and 77 per cent. for six months. How much this means! For every drop of breast-milk helps not only to nourish the baby but to develop and increase its digestive capacity for other milk or foods.

In order to promote nursing, preliminary care of the nipples is frequently necessary, and to prolong the nursing the mother's comfort should be considered, especially as regards her sleep at night. This can be done by making the nursing periods regular, and at least three hours apart by day, with only one feeding at night; moreover, after three months an occasional bottle-feeding may be given.

Every physician should appreciate the importance and understand the technique of maintaining breastfeeding as long as possible.

For the premature and feeble infants breast milk is almost a necessity, and can usually be obtained from maternity hospitals, or from the wet nurse agencies that are now being established. Artificial feeding, even with the best modifications of milk, can be regarded only as a second choice; it succeeds well when constantly and carefully supervised.

Important adjuvants to proper nourishment—more important with babies that are bottle-fed—are the matters of proper housing, ventilation, clothing, rest, exercise and airing, bathing and protection from infection. In this connection it is interesting to recall that Prausnitz, investigating the influence of the living conditions upon the occurrence of gastro-intestinal disease, found that, in Graz, not a single child of rich parents died in the five years investigated; during the same period, of those in moderate circumstances, 4 per cent. died of gastro-intestinal disease, of the poor 36 per cent. died, and of the destitute 60 per cent. died.

Analogous results were found in the four other cities and indicate the influence of the home conditions, feeling and care.

From what has been said, it is manifest, I think, that special education in infant hygiene is needed, and it is also evident that this matter is primarily one for the medical profession rather than for the government or philanthropic agencies. What can and should the medical profession do? The answer is, establish in every medical school a separate department of pediatrics commensurate in importance with the importance of this subject, and include in the curriculum a special course on infant hygiene.

On the continent pediatrics has long been recognized as a specialty. Not only have special journals for children's diseases been published for several decades, but the medical faculties have had special departments with full professors of pediatrics and special hospitals for teaching and research. Among the new university hospital buildings in Vienna, the children's clinic occupies as prominent a position, and, with its contagious pavillions, covers more ground than the new medical clinic.

In considering the subject of infant hygiene, just as in dealing with the baby we cannot separate the baby from the mother without doing harm, so there should be the closest co-operation between the departments of obstetrics and pediatrics. That part of the course dealing with pre-natal care and the prevention of mortality during childbirth might well be given by the department of obstetrics. In addition to lectures, the instruction should include visits to properly conducted maternity services, infants' consultations or milk stations, dairies and milk laboratories as well as infants' hospitals. There should also be installed a small model or miniature exhibit, showing what is bad as well as what is good for the mother and the baby, with especial reference to the living-room or nursery, and its ventilation, the baby's crib, clothing, care of the milk and bottles, table for food preparations, arrangements for bathing, for fresh air, &c. The greatest amount of time and effort should be devoted to the subject of infant feeding, with emphasis on maternal nursing.

The chief consideration is that every student should have indelibly impressed upon his mind the influence upon infant life and infant health of the following:—

(1) Heredity.—The teachings of eugenics as regards parenthood, with special reference to insanity, alcoholism, tuberculosis, syphilis and gonococcus infection; discussion of measures advisable. Fitness for marriage; school instruction in sex hygiene; "little mothers" classes. The co-operation of the clergy might be secured by their attendance at these lectures.

(2) Pre-natal Care.—Occupation, exercise, diet; preparation of breast for nursing. Assistance by the State.

(3) Childbirth.—Prevention of obstetrical deaths and of sepsis in mother and babe; prevention of blindness; the question of midwives; advantages of birth registration.

(4) Special care of premature and feeble infants.

(5) Infant Feeding.—General principles; breast milk and advantages of maternal nursing; promotion of maternal nursing; aids for nursing mothers; wet nurses; management of illegitimates and foundlings.

(6) Weaning.—Indications for, and advantages of gradual weaning: treatment of indigestion in nurslings.

(7) Artificial Feeding.—Principles: cow's milk, its production and care; pasteurization and boiling, their effects and uses; modified cow's milk, its advantages over patent foods; usefulness of patent foods in special conditions: treatment of diarrhœa in bottle-fed infants.

(8) Normal Development in Infancy.—Weight, teething, muscular co-ordination, mental development.

(9) Hygiene of the Baby.—Bathing, clothing, airing, "hardening," sleep, exercise, rest.

(10) Hygiene of the Nursery.—Crib, perambulator, bottles; nipples and preparations of food.

(11) Prevention of Infection.—"Colds," diarrhœa, contagious exanthemata, whooping-cough and tuberculosis.

(12) Agencies for infant care and child help, correlation of; needs in the campaign against infant morbidity.

In closing I will simply reiterate that, in matters of hygiene, what is best for the baby is best for the race.

THE NECESSITY FOR SPECIAL EDUCATION IN INFANT HYGIENE*

BY C. PAGET LAPAGE, M.D., M.R.C.P.

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Our high infantile mortality is, perhaps one of the greatest of the evils that are attendant on modern civilization. And we have to consider not only our infantile mortality, but also our infantile morbidity. We must note that a large proportion of our infants reach the age of one year with a weakened constitution and a lowered resistance to disease. The prevention of this morbidity in infants is almost as important as the prevention of the actual deaths.

In causing infantile morbidity and mortality, poverty has a very great effect, but I have no doubt that much can be done by education to lessen the effects of poverty and its attendant evils. Poverty usually goes with bad housing, irregular work of the father, work out of the home by the mother, and all these form a vicious cycle, one factor reacting on and producing another. Taken all together they have a very bad effect on the infant.

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*Read before the National Conference Infant Mortality, London.

I should like to state here my opinion of the evil effects of bad housing and of the need that there is for remedying this. Overcrowding contributes largely to our high infantile mortality and to my mind the only remedy for this overcrowding is the decentralization of our large works. With improved means of transit for goods this ought to be possible. Working people must live near to their work, and, if all the large works are close together, overcrowding and bad housing are inevitable. If families are crowded together in unhygienic surroundings, no education, no care and no management can prevent an undue amount of disease; we often see efforts at teaching of hygiene almost completely nullified through want of space or appliances to carry out the lessons taught. Remedies in housing will no doubt come, and we must not relax our efforts at teaching because, whatever the housing conditions, a great deal can be done by education to lessen the effects of poverty.

In Manchester at the schools for mothers we are conducting an inquiry in two marked-out districts in which there has been previously little systematic attempt at instruction. With the help of the medical officer of health we are trying to supervise every child in each district for the first year of its life, and by work on the usual lines of schools for mothers to reduce the infantile morbidity and mortality. So many variable factors bear in infantile mortality that it is necessary to have the accumulation of several years' evidence before one can draw conclusions from figures, but, up to the present, we have reason to believe that the teaching and visiting are having an appreciable effect on the infantile mortality in the districts. As regards the infant morbidity we get rather conflicting evidence; in one district there seems to be little if any connection between low wages and dirtiness in the house and bad health in the infants; but, in the other and poorer district, there is a distinct relationship between low wages and dirty homes and bad health in the infant. A woman who has a dirty and untidy house is likely to be a careless and an inefficient mother.

At the Manchester Children's Hospital Dispensary there have been 6,188 deaths in infants under two years of age during the last thirty years. I once made an analysis of the causes of these deaths, and this showed that digestive diseases give rise to a far larger proportion of deaths in infancy than do respiratory diseases, and especially so in the earlier periods of the first year of life. The anaylsis also showed that there is a greater amount of these digestive diseases than there used to be. This is to some extent due to the increase in summer diarrhœa, but is by no means entirely to be accounted for in this way. Now it is just in preventing these digestive disorders that education can do most.

At schools for mothers, at hospitals and in private practice, one sees an extraordinary amount of ignorance of matters relating to the care of infants, and especially so if that infant is the first-born. We all know that anybody who possesses a valuable machine does not like it to be handled by a novice. A man who is going to buy a motor car, if he is a novice and if he is wise, takes practical and theoretical lessons before he tries to drive it. If he does not, he may do great damage at the beginning. By the side of the machinery of a motor-car the mechanism of a baby is delicate and intricate beyond compare, and there is the additional disadvantage that broken parts cannot be replaced. And yet many a novice mother tries her hand at caring for an infant with no more preparation than the odd bits of knowledge she has picked up.

To my mind the birthright of many of the first-born of today is by no means enviable, and they fully earn what right they have, for it is often their lot to act as an object lesson for an inexperienced mother and to enable her to learn by her mistakes how to bring up her later children.

A point that strikes me most forcibly is the prevailing ignorance and helplessness if any difficulty arises in the course of breast-feeding. Far too many babies are weaned because of some difficulty in breast-feeding, and far too often this weaning is done on the advice of medical men and midwives. We do not know enough about breast-feeding and the causes that lead to variations in the power to nourish an infant, and I want to enter a plea for more scientific study and systematic instruction in this important part of infant hygiene. We owe a debt to Dr. E. Pritchard and others who have lately done so much to stimulate this study, and I hope that we shall have more articles like that by Dr. Lucy Naish in the Lancet of June 14, 1913.

It is the same with artificial feeding; at hospitals and especially in private practice, the failures are far more often due to ignorance than to want of care. In many cases the mother depends on the knowledge she has picked up from the maternity nurse; such knowledge usually depends entirely on chance and a haphazard discussion of points that may arise.

The general advantages and the great success that attend well-directed effort by schools for mothers are now clearly established, but to my mind it would be a great advantage if these schools could be extended in scope so that their influence could reach mothers in higher social scales as well. There is much need for instruction to mothers of all classes. A great deal can be learnt about infant hygiene by attending as voluntary helpers at the existing schools, but only a few of the women who really need instruction have either the time or the strength or the aptitude for such work.

Something is being done by training colleges. At the Princess Christian Training College in Manchester the period of instruction extends over eight months and is practical in nature; the pupils have the entire care of infants and young children under the supervision of trained instructors. The majority of the pupils intend to use the knowledge they have obtained as a means of earning their living, and for them the period of training is, perhaps, too short; but, for women who wish to obtain a knowledge of infant hygiene, there is no reason why a shorter period of training should not be sufficient to teach the essential points in caring for a baby. One disadvantage of these training colleges is that they deal only with artificially-fed infants.

The teaching of girls in the elementary schools has been very successful in Manchester, and there is no doubt that good grounding in the elementary principles of infant hygiene will be of great value to these girls in later life; but there should be further and more practical training if possible. We all know how hard it is to study a subject efficiently without practical work and how much a baby differs from a model; it is therefore necessary that we should have some scheme by which girls or women who are anxious to learn infant hygiene can obtain practical experience by actually looking after a baby.

At both maternity and children's hospitals more should be done; each hospital should form a centre for the spread of knowledge of infant hygiene. Budin's clinic in Paris has attained world-wide fame and many of his methods of ensuring infant hygiene could well be imitated. If necessary, visitors could be employed in suitable cases, or more use could be made of other institutions which already employ visitors. I konw from experience how valuable an adjunct to hospital treatment it is to have one's efforts supplemented by the supervision and care of efficient visitors to the homes.

Finally there is room for much more teaching of those who after all have most to do with the spread of knowledge of infant hygiene—maternity nurses and medical men. At hospitals, where instruction is given to midwives, infant hygiene and infant feeding should be systematically taught. I do not say that there is no instruction at present, but my experience tells me that there is considerable room for improvement. In the same way medical students should have far more instruction than they have at present in the hygiene and care of infants. Our tendency is still to lay too much stress on disease and diseased conditions, and to neglect the teaching of the maintenance of health.

It is to the maintenance of health that our efforts should be directed and, if I may be allowed one more word, I should like to emphasize the immense importance of periodical medical inspection during infancy and childhood, when the child is growing and developing. It does not need much experience of work at infant consultations and of school medical inspection to demonstrate this. Just as parents, if they are wise, have their children's teeth inspected periodically, apart from the development of disease, so they should have their children inspected medically at definite periods. Medical men should adapt themselves to this periodical medical inspection and should give advice as to the maintenance of health. If these measures were generally adopted I am sure that they would have a great effect in the prevention of disease.

THE FEDERAL CHILDREN'S BUREAU OF THE UNITED STATES OF AMERICA. SOME ASPECTS OF ITS PRESENT WORK*

BY MISS JULIA C. LATHROP.
Chief of the Bureau.

The Federal Children's Bureau is the result of efforts lasting for ten years to secure a provision by which the general government should create a special acency devoted to the interests of the children of the nation, with methods of investigation and publicity analogous to those through which the various bureaus of the department of agriculture have vastly increased the productiveness of the soil and the welfare of farmers in this country. In these efforts many organizations and individuals joined, notably the national child labour Committee, various settlements and women's clubs, societies and associations engaged in the active work of caring for children and protecting the public health. So that the bureau went into operation with a remarkable backing of public interest and good will.

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*Read before the National Conference Infant Mortality, London.

The Children's Bureau was established by an act of congress on April 9, 1912, although it did not go into operation until August 23 of the same year, when the appropriation for its maintenance became available. The statute defines its duties thus:—

"The said bureau shall investigate and report to said department upon all matters pertaining to the welfare of children and child life among all classes of our people, and shall especially investigate the questions of infant mortality, the birth-rate, orphanage, juvenile courts, desertion, dangerous occupations, accidents and diseases of children, employment, legislation affecting children in the several states and territories. The chief of said bureau may from time to time publish the results of these investigations in such manner and to such extent as may be prescribed by the Secretary of Commerce and Labor" (now Secretary of Labor). For the discharge of these duties, the statute provides a staff of fifteen persons and an annual appropriation of about thirty thousand dollars.

As to the scope of the bureau—"all matters pertaining to the welfare of children and child life"—this provision indicates that it covers all the children of the nation. But the statute does not define a child, nor indeed is there any uniform authoritative definition as to the age at which childhood ends. If we turn to the last census, we get a view of the numbers of American children, divided according to the census method into five-year age groups. The group up to 5 years shows 10,631,364 children; 5 to 9 years, 9,760,632; 10 to 14 years, 9,107,140; 15 to 19 years, 9,063,603. So that, if we were to limit our attention to children before they reach the school age, we should have a field of over 10 millions of children. If we enlarge the scope to include the children up to the close of the standard school period—

14 years—we should have twenty-nine and a half millions. And if we add the nine million odd young people under 20, we should find that the bureau might claim that thirty-eight and a half million children were included within its purview.

It is apparent that this is a bureau of investigation and publicity, and although it is directed to investigate "all matters," that direction is to be interpreted with relation to other existing government bureaus, notably those of the census, education, and public health, which have to do with certain aspects of the care of children, and with which this bureau naturally co-operates.

It is obviously intended that the children's bureau shall occupy the field popularly described as that of "child welfare," which must be based upon census enumerations and must touch upon the social, enonomic and moral aspects of both education and health. It is to be in no sense an administrative or executive body. According to the theory of government in the United States, each individual state stands in loco parentis to the children resident within it, and whether they are normal children with normal family protection, or whether they may be defective, dependent or delinquent, it makes and enforces the laws affecting them. The creation of the children's bureau in no wise lessens this responsibility, but it does place at the service of the various states and of any association or individual desiring it such information as can be commanded by the bureau regarding the many aspects of child welfare.

The law itself mentions infant mortality as the first subject to be undertaken, and it is certainly reasonable that the government should consider first of all this subject—the wastage of human life at the beginning. If the census authorities are right in estimating that at least 300,000 babies, or one out of every eight born, died in the United States last year before any one of them had lived a twelvemonth—if, of all the funerals in America, one in every five is that of a child less than a year old—and if, as we are told, at least half of these deaths are preventable by methods that we already know—then the American public cannot disregard the call to action, nor can we ignore the larger implications of social welfare presented by the statement of Newsholme:—

"Infant mortality is the most sensitive index we possess of social welfare. If babies were well born and well cared for, their mortality would be negligible. The infant death-rate measures the intelligence, health, and right living of fathers and mothers, the standards of morals and sanitation of communities and governments, the efficiency of physicians, nurses, health officers and educators.''

Again, we are challenged by the report of the New York special public health commission just issued, which shows for that state that, since 1902, the rural and village death-rate has slowly risen, that it began to exceed the urban death-rate in 1909, and that ''since that date the divergence between the two, in favor of the urban death-rate, has steadily increased.''

The report of the commission continues—''The work of this commission may be said to be to ascertain how the rural and village death-rate can be made to follow the urban death-rate in its downward course.'' Partly because the limited appropriations forbade the bureau's undertaking extensive inquiries for the present, and partly because the great cities of this country have already under way many successful civic and volunteer activities for reducing infant mortality, while the necessity for such work, being less obvious in smaller communities, is not yet thoroughly recognized, it was determined to undertake a series of studies into infant mortality in small industrial centres and rural communities as our first field work, and it is a preliminary statement regarding the method of this inquiry that I should like to submit here.

Our inquiry does not assume to be a medical inquiry, or even one based upon the records of deaths. It is rather an inquiry into the social, industrial and economic conditions surrounding the children born in a given town within a given year, and is an effort to trace every child so born either through that year or as much of that as he survives.

It was necessary, in conducting an inquiry thus based upon the birth records, to choose localities within the registration area. In the United States, as will be pointed out later, the registration of births is neither uniform nor universal at the present time. Johnstown, Pennsylvania, was selected because its size, situation in a registration state, and general industrial characteristics made it a suitable beginning.

The schedule follows the child through the first year of life in his family surroundings, and in addition embraces a survey of the reproductive history of the mother. It is necessarily intricate and perhaps annoying to the person who must answer the questions.

The inquiry was launched with some anxiety as to how the agents would be received. The field agents were, of course, necessarily women. The law states that "No official or agent, or representative of said bureau shall, over the objection of the head of the family, enter any house used exclusively as a family residence." The instructions to the agents were, in addition to this, that they should enter no home without the goodwill of the woman at the head of the family, and for two reasons—first, because the humbler the home, the greater its need that the government should recognize its dignity; and because, further, without the goodwill of the woman at the head of it, no schedule could be prepared which would be worth writing down. It was doubtless an aid in securing the co-operation of the mothers that the schedule was arranged so that the name and address appeared on a perforated slip which was removed in the mother's presence, thus assuring her that the schedule was returned to the office without a name upon it, and that the government only desired the facts, without any tinge of personality.

Fifteen hundred and fifty-eight were secured. It is interesting to note that there were two refusals.

It is obvious that such an inquiry is absolutely democratic, since it must follow the history of every baby wherever born, if born within the given year. The agents found everywhere a cordial reception. Whether among the foreign-born women who must be visited with an interpreter, or in the American quarter of the town, the mothers responded to the request of the government that they co-operate in an effort to learn how to safeguard their own and their neighbors' lives. The state board of health sent for distribution in the foreign quarters circulars in various languages on the care of babies. The American mothers took our agents to task because the government had no instructions in English for them, complaining of the confusion of doctrine among doctors, nurses, neighbors and relatives.

Such an inquiry should bring out an invaluable by-product of local attention, and this is shown in the present instance by the interest of the Health Department, the press, the women's clubs, and the clergy; by renewed public activity in such matters as the disposal of garbage; and by the request of the city that the Department of Agriculture make a thorough examination of the milk supply. This examination is now (June, 1913) under way.

It would hardly seem worth while to take up your time with a description of so slender an inquiry, were it not to be considered the beginning of a series which is to be carried on, securing comparable data in every instance. The report of each inquiry is to be made independently and published as promptly as it can be prepared. Later it is intended to collate all the material.

There are various aspects of the present work of the Children's Bureau which I will not discuss here, but I may briefly mention that the Bureau has in preparation a series of pamphlets on the care of children, beginning with one upon pre-natal care; that it has ready for the press the first instalment of material which will appear as a statistical handbook, embodying the figures of the last United States Census relating to children, rearranged for convenient use by those interested in the welfare of children.

I wish to mention particularly certain activities closely related to the inquiry into infant mortality. There will issue from the press in a few days the first of a series of annual bulletins on Baby Saving Campaigns, entitled "A Preliminary Report on what American Cities are doing to Prevent Infant Mortality." While this material has of necessity been prepared hastily, it contains statements from various cities as to the precise methods of their work, including copies of baby-saving circulars in various foreign languages, so that it is really a handbook for health officers desiring suggestions as to how to go to work in a given town.

There is one important aspect of the efforts to reduce infant mortality which is brought out in this new pamphlet. It shows that, according to the Census mortality figures for the registration area of the United States during the year 1910, nearly 10 per cent. of children dying under one year of age lived less than one day, and 25.5 per cent. lived less than one week. The same figures for the year 1911 show a still more distressing situation. In 1911, with an increased death registration area, there was a decrease of deaths of children under one year; but those who lived less than one day increased not only relatively but absolutely—from not quite 10 per cent. in 1910, the figure has risen to 12.1 per cent. in 1911, while those living less than one week increased from 23.5 per cent. in 1910 to 27.4 per cent. in 1911. These figures show that the efforts to save babies through pure milk and more intelligent care have produced results in the general decrease in deaths of children, while throwing into marked relief the persistent increase in deaths during the first days of life, which these efforts alone cannot reach.

The New York Milk Committee in its 1912 report gives some pertinent figures in this connection. In that city the attempt was made to reduce, in one restricted area, this large percentage of infant mortality in the first days of life, by getting in touch with the expectant mother as early as possible during pregnancy. This campaign, begun in the summer of 1911, showed a reduction, up to the end of 1912, in this supervised area as compared with the borough of Manhattan, of 32 per cent. in deaths under one month, and of 28 per cent: stillbirths among 1,398 babies, with two deaths among 1,375 mothers. Similar work for expectant mothers has been undertaken already in other cities, among which are Indianapolis, Providence, Baltimore, Chicago, St. Louis, Detroit, Richmond, Louisville, Milwaukee, Nashville, Cincinnati, Fall River (Mass.), Buffalo and Boston.

As stated above, the inquiry into infant mortality can only be conducted in communities where there is birth registration. Hence the Bureau is of necessity co-operating in the campaign for better vital statistics and is especially bound to urge adequate birth registration because of the many ways in which accurate birth records may serve the ends of child welfare. Its first bulletin was upon "Birth Registration: An Aid in Protecting the Lives and Rights of Children." The Notification of Births Act of England provides for notification within thirty-six hours, and the recognition of its value in bringing the immediate care of doctors and nurses to needy families is a highly effective argument in our campaign for early notification. At the present rate of progress, it will be but a few years before there are uniform vital statistic laws throughout the United States. These laws, like those for the protection of children, must be passed by each state individually and cannot be secured by Federal statute.

ON THE FUNDAMENTAL MECHANISMS OF THE ACTIVITY OF THE CEREBRAL CORTEX IN CHILDREN

BY N. KRASNOGORSKI, M.D.
St. Petersburg

1. The activity of the cerebral hemispheres in children is founded on the following five fundamental mechanisms of the cerebral cortex:

1. The mechanism of contemporaneous interdependence.
    (a) The mechanism of conditional reflexes.
    (b) The mechanism of specific conditional reflex-traces.
    (c) The mechanism of the speech reflex.
2. The mechanism of analysators.
3. The mechanism of inhibition.
4. The mechanism of contra-inhibition.
5. The mechanism of positive and negative charge and discharge.

2. The conditional reflexes in children have the same origin as in animals, but they differ from these reflexes in animals owing to their extreme rapidity of formation, their great stability, and their rapid disappearance. These mechanisms are developed in normal children during the second half of the first year, but their formation is not so rapid as in latter years. The mechanism of conditional reflexes reaches functional completeness in the course of the second year of life.

The conditional reflex activity diminishes with various disturbances of nutrition, alimentary toxemias, febrile conditions, and in idiocy, imbecility and epilepsy.

Testing the conditional motor reflexes is the only objective method of diagnosing analysator disturbances during the first three years of childhood.

3. The mechanism of reflex-traces is much more complete in children than in animals. The specificity of these reflex-traces, the rapidity of their formation, their duration, their regular and gradual disappearance, are characteristics that both differentiate this group of reflexes in man from the same group in animals, and complete and refine the activity of the

cerebral cortex in man. The development of the mechanism of reflex-traces takes place much later in childhood than the development of the ordinary conditional reflex, viz., in the course of the second year of life. In many neuropathic children of the over-excitable type the specificity of the reflex-trace is often diminished.

4. The analysis of external stimuli by means of the analysators shows widespread differences in children and animals. Thus the hearing and smell analysators in children have very much less power of differentiating musical tones and smells than in dogs, while the functions of the skin and sight analysators is much more precise in children than in dogs. In the first-year of life the skin, sight, hearing, and smell analysators are so far developed in children that exact differentiations can be formed, even though the process takes rather longer than later in life. In idiots, imbeciles, and various neuropathic children, and in rickets, myxœdema, epilepsy, and especially immediately after epileptic convulsions, the analysing power of the analysators is much diminished.

5. All kinds of inhibitions are present in the central nervous system of children. The mechanism of inhibitions reaches its greatest and most complicated development in man. The conditional inhibitions and also the most varied differentiations are formed much more rapidly in children than in animals. In pathological nervous systems (idiocy, imbecility, neuropathy, etc.) the formation of conditional inhibitions is greatly diminished, and they show a labile character and are apt to disappear rapidly.

6. The mechanism of positive and negative charge and discharge is the most complicated and most complete of all cortical mechanisms. It is developed relatively late in children, i.e., in the course of the third year of life, and it shows the greatest sensitiveness to pathological processes. Its function is much diminished in many neuropathic children, and they can be classified by this means.

7. With the help of motor conditional reflexes it is not only possible to follow the entire development and gradual complication of the cortical activity in childhood, from the first few weeks of life, but it is also possible to recognize even in the first few months of life the characteristics and defects in functions of the cerebral cortex, and to apply as soon as possible the corresponding therapeutic measures.

SOCIETY TRANSACTIONS

MONTHLY REVIEW OF FRENCH PEDIATRIC LITERATURE

Translated by Emile Brunor, M.D., New York City

Serotherapy.—Hitherto antiteianic serotherapathy can hardly be said to have done much so far as the actual disease is concerned. It has been held that the treatment is capable of preventing the occurrence of tetanus if applied directly after the receipt of the traumatism but even here opinions are greatly divided. It is always difficult, if not impossible, to know for certain whether or not tetanus would have supervened in the absence of serotherapathy and there are plenty of surgeons who assert that in these cases serotherapy is a useless therapeutical complication, since statistics give exactly the same figures of deaths and survivals whether the treatment is employed or not. Nevertheless, it would seem to be established, and it has become a routine measure, to inject serum in every case where the wound, by its aspect, its nature and the special conditions under which it was inflicted, might predispose to tetanus. This is a rule of conduct which is at any rate inoffensive and can therefore be adopted by practitioners who wish to put their minds at rest.

With regard to the effects of serotherapathy, once the disease is in activity, we only know of an infinitesimal number of cases in which it is possible to assert that it has truly exerted a curative action. From this point of view a case recently brought forward by MM. Castaigne, Touraine and Francon, is of special interest.

The case was that of a girl, 14 years of age, who, when the treatment was instituted, had already been suffering from symptoms of tetanus for five days. Under these circumstances it is no matter for surprise that she presented the syndrome of bulbar intoxication. It was decided to try the serum and on account of the gravity of the signs the treatment was made particularly intensive. As a matter of fact in 13 days she was given 760 c.c. of the serum of which 145 by intraspinal injection, in order to come into contact with a more extensive area of nerve centers, and 350 by the intravenous method. The patient recovered and this is the point specially to be borne in mind. Nevertheless there are a certain number of collateral incidents which cannot be passed over in silence.

The first point to be remarked is, that, in conformity with a peculiarity already noticed when strong doses were employed, if we fail, even for a single day, to inject the usual amount, the diminution of dose is invariably followed by contractions and a recrudescence of the symptoms. Attention had already been called to this more particularly by Josue who, in two of his patients, remarked curious recrudescences. MM. Castaigne, Touraine and Francon remarked that when they began to diminish the dose there was a noteworthy return of the symptoms and in this connection they raise the question whether this was due to a relapse or to hyper-excitability of the nerves, especially during convalescence. The recrudescence was in any case benign and fugitive.

On the other hand it was to be apprehended with such strong doses of the serum, administered at such short intervals, that grave serum accidents might follow. There was, however, nothing of the kind, or rother what was noticed that these accidents were precisely the same as when moderate doses were employed. The reason why no accidents of the kind were manifested may possibly be that the injections followed each other at short intervals. We know, indeed, that in anaphylaxy, to which these accidents are generally ascribed, a certain period of incubation is necessary between the predisposing injection and the determining injection.

However this may be, this observation shows that when the symptoms have actually supervened, that is to say, when we are using the serum not as a prophylactic but for curative purposes, it behooves us to employ large doses. The cases mentioned by Mr. Josue in discussing this case inferred the administration of as much as 50 c.c. of the serum in the 24 hours. Both his patients recovered. (Monde Medical, February, 1914.)

Recalcification.—Dr. Galliet, in Les Archives de Medecine des Enfants, No. 4, reports having treated quite a number of little patients with Ferrier method, in the out-patient department of the Rotheschild Hospital, Paris, within the last three years. The results obtained were excellent.

All of these little patients were poor children living with their parents, who, residing continuously in Paris, were unable to escape from the impure air of the city, except in a few instances when they were fortunate enough to be sent to the country for a couple of weeks. These patients were consequently under almost continual observation.

Dr. Galliel had occasion to try the Ferrier method mostly on patients in the first and second stages of pulmonary tuberculosis or who were affected with broncho-tracheal adenopathy.

He, like Ferrier, discarded all superalimentation, supplementing the diet with wafers of lime or magnesia salts, to which was added 1 to 3 centigrammes of Arrhenal per cachet, according to age. These wafers may be replaced advantageously with Tricaline, pure or combined with Adrenalin or Methylarsinate, according to the case. The stabilization of these preparations is a cause of their undoubted efficiency.

Dr. Galliet added to the treatment cod-liver oil, which is as we know, prohibited by Dr. Ferrier. The oil has distinct therapeutic properties and, if taken in small quantities, is not apt to interfere or overtax the hepatic functions.

At all events, the little patients seemed to benefit by this method of treatment, and Dr. Galliet's clinical notes would lead us to conclude that the medication had a decided effect on the pulmonary tuberculosis. An appreciable improvement of the general condition was noted and the children not only ceased to lose flesh, but they gained in weight. Their growth no longer impeded, resumed its normal course, and although they always remained somewhat delicate, they nevertheless lived the same life as other children of their age.

The method can, therefore, be highly recommended; it is the only one that is both useful and practicable for the poorer classes.

M. Marfan claims that there is one characteristic symptom of tuberculosis of the traches-bronchial lymphatic glands, specially well marked in infants under two years of age, viz.: the bi-tonal cough.

Ordinary cough, says he, consists of one single sound, whereas the bi-tonal cough is made up of two distinct discordant sounds emitted simultaneously. The first is low-toned and muffled, the second is higher and presents a musical, and at the same time cracked quality. It seems as though two sounds were being emitted by two different larynges.

These are the very words of the distinguished physician of the hospital for sick children.

There are several ways in which mechanism of production of the bi-tonal cough can be explained by tracheo-bronchial glandular tuberculosis but whatever opinion we may hold on this point there does not appear to be any doubt as to the significance of this phenomenon. Anyhow, here are the conclusions at which he has arrived, given at the end of his paper written in conjunction with MM. Dora-Mantoux.

It has been shown that in early infancy this cough is of the greatest diagnostic value in this affection of which it is a certain indication. It may be well to add that it is not less significant from the point of view of prognosis. As a matter of fact it may be taken to indicate the grave form of tuberculosis bronchial adenopathy; it indicates the presence of much enlarged glands which run a rapid course and give rise to pressure symptoms. In every instance in which these observers were able to follow up the cases long enough, cases in which the bi-tonal cough was persistent, death supervened in a comparatively short space of time, on an average a few weeks, rarely being delayed beyond two months.

It would seem therefore that this sign is to be added to those hitherto described as pathognomonic of infantile tracheobronchial adenopathy. It is of value first of all because classic symptoms often leave us in doubt and, secondly, because it is specially applicable to infants in whom the diagnosis of the affection in question is particularly difficult and uncertain. (Le Nowsison, November, 1913.)

Some New Ideas in the Therapeutics of Infantile Obesity and the Adipose Genital Syndrome, by Mouriquand

(Pediatrie, Oct. 1, 1913)

Infantile obesity is not considered as a definite clinical entity, but as a syndrome with complicated etiology. Alterations are functional disturbances of certain glands with internal secretions, especially the genital, thyroid and pituitary, seem to be responsible for the dystrophy.

Pathological or experimental lesions of the hypophysis or the pineal region determine in the child or young animal an adipo-genital syndrome, characterized by the excess of fatty tissue, atrophy or disturbances of the genital organs, certain nervous manifestations which are clinically to be found in numerous cases of obesity, so called essential and which may be laid to disturbances of the pituitary gland. Dercum's disease may be classed under this heading. The treatment of infantile obesity besides dietetic and clinical treatment is amendable to the new method of treatment. The author reviews the new means at hand. He has shown that there is a surgical treatment which has given good results in certain cases.

Radio therapy has been used with success although it seems illogical to use that in a symptom complex which depends on the deficiency of the gland rather than a measure which is indicated in over activity of the gland or acromegaly or hyper pituitarism treatment seems for this reason particularly indicated.

The opotherapeutic treatment by glandular extracts of the hypophysis, by mouth, by hypodermic injections and then by transplantation has been employed and has given interesting improvements.

The author advises the association of thyroid medication to the pituitary medication and to alternate the use of these two. The genital opotherapy may be used as a complement in cases of failure.

The Modification of Milk by the Use of an Excess of Sugar and its Application in Infantile Dyspepsia, by Variot & La Vaille (Soc.. de Pediatrie)

In a former communication we have investigated the anti emetic properties of sweetened condensed milk and we now have several observations to offer.

In 15 cases we have noted the sedative action of oversweetened milk upon the most obstinate and inveterate cases of vomiting. We have only failed in some rare cases and especially in one case, which was suffering with a congenital pyloric stenosis which was diagnosed with the X-ray and operated on by Dr. Veau. The post mortem examination demonstrated the accuracy of the diagnosis made during life. We have mentioned before that if you replace sweetened condensed milk by un-sweetened condensed milk or by boiled milk, the vomiting would reappear, at least in the beginning, but if you substituted ordinary milk which has been over-sweetened, and by that we mean milk containing 10 per cent of cane sugar, a quantity equivalent to that found in condensed milk, children fed upon this modified milk cease vomiting and assimilate the food perfectly and therefore gain weight. Nevertheless, it seemed to us that the excretions were somewhat more liquid and profouse than with condensed milk. The milk was sterilized at 108 centigrade for three-quarters of an hour. Condensed milk gives only three or four stools a day. The use of oversweetened milk has given much more laxative effects and even diarrhoea in some cases. We have studied the effect of heat and the addition of sugar and we have concluded that the sweetening of the milk is the essential part which has the anti-emetic properties.

Mr. Armand Gautier, our eminent chemist, advises that caseine combines with sugar to form a new compound. There are already known compounds of albuminoids with the sugars. Be it as it may, the form of caseine in warm sweetened milk as well as in condensed milk is different to the caseine of ordinary raw milk. The coagulum of over-sweetened milk is in small curds and resembles that of human milk so that the over-sweetening of milk has a decided chemical action upon the albuminoids in milk.

A Case of Athrepsia Due to Defective Alimentation, by Mr. Variott (La Clinique Infantile, Nov. 15, 1913)

The author reports a case in a child, who at the age of 15 months weighed only 5 kg. 600 gms., and measured 65 centimeters. The child being well constituted otherwise, this condition was attributed to deficient alimentation.

After one month's methodical treatment with condensed milk and over-sweetened milk, the child has gained 2 kg. in weight and 4 ctms. in growth without any incident to interrupt this course of extraordinary growth.

The condensed milk and over-sweetened milk may be considered a very good means of intensive alimentation, is perfectly assimilated and allows to repair any defect in metabolism.

Infantile Therapeutics—Treatment of Pertussis by Iodine

Preparations of iodine are taking an important part in infections diseases. M. A. Cavazani (of Pisa) obtained encouraging results in the treatment of whooping cough by iodine. Basing his observations upon ten years experience, this physician believes that iodine will take an important part in the therapeutics of pertussis. Of course, it is not to be considered specific in a disease with such variable evolution, such paroxysms of coughing and its complications. Still, iodine will attentuate the graver symptoms of the disease diminish the frequency of the paroxysms, shorten the duration of the disease and prevent complications.

Whenever iodine is given at the outset of the disease, the evolution of pertussis takes a regular and benign course. Mr. Cavazani uses an iodo-iodized solution containing: Iodine gm. 1.00, pot. Iodid gm 15.0, distilled Water gm. 15.0.

This solution is more stable than iodine, does not evaporate so easily and its taste can be easily masked. It is administered as drops in sweetened milk or coffee, four to six drops daily for the first year, six to ten for 2 to 5 years and ten to fifteen beyond that. The daily dose is divided as required.

Mr. Cavazzani has never noticed any intolerance not any contra-indications, neither has he seen any idosyncrasies or other complications. Besides this remedy can be associated with bromides or quinine. Still, M. Cavazzani treats pertussis systematically with iodine; he has never had to deal with a case having a severe or protracted evolution or with severe complications as would happen with ordinary therapeutic means.

Epilepsy and Late Hereditary Cerebral Syphilis Cured by Iodo-Therapy by Dr. Paul Boncour, Chief Physician to the Institute Medico Pedagogique

The following paragraph is particularly interesting, inasmuch as it refers to a case of pure epilepsy, being the essential form of a late hereditary syphilis.

Child, Felix D., aged 12 years, was seized with a paralytic fit in January, 1912, just as he was about to sit down to dinner. He uttered a cry, fell backwards, seized with general convulsions, frothed at the mouth, bit his tongue and voided urine. For a few minutes he remained somewhat stiffened, then everything subsided so that the next day he went back to school. Fifteen days after a new fit somewhat analogous to the preceding one was followed by another one at the end of 48 hours. A physician called in from the neighborhood examined the patient and ordered bromides. In spite of that the attacks reoccurred with a distressing regularity every 15 to 18 days. Of course the child stopped going to school, but it did not prevent him from studying; he wished to do so, and his intelligence and disposition did not seem to have undergone any alteration.

June, 1912, I was called in to examine the child, and the family history as well as the previous history of the child was negative. The father affirmed that this only son had never been sick and that he had been born under excellent conditions and that he, as well as his wife, was in excellent health. After careful examination I found that the child was perfectly formed and that he had no scars or malformation, he did not suffer from any malaise or other nervous trouble, and I advised iodine medication, adding a few dietetic measures as well as hydrotherapy.

In October the mother of the child came to see me unbeknown to her husband to tell me that the condition was the same, and wished to let me know certain facts that her husband had refused to give me, even though asked for them repeatedly.

Before the birth of this child she said she had a three months miscarriage; then a year after she had had a still birth and the child was macerated. Pushing my investigations further I found that at the time of the first miscarriage she had had a tenacious rash and that her husband took iodide of potassium regularly, so that the application of specific treatment was indicated and was taken immediately. The result was excellent, since from the 3rd of October to the 25th of November only one very slight attack was noticed.

Unfortunately, the iodine medication could not be continued because the child showed pronounced symptoms of iodism. Upon several occasions the medication was reinstituted but after three or four days symptoms of intolerance appeared. I tried in vain to utilize several iodine preparations and to make hypodermic injections.

The impossibility of curing the child seemed to be rather distressing, because the convulsions reappeared January, 1913, with an alarming intensity and frequency.

Upon the advice of a colleague who is well posted upon pharmaceutical preparations and their properties, I prescribed iodostarine, and from that day my young patient could absorb enough iodine.

Actually three months elapsed without any attacks and the child who is particularly studious, works regularly with a tutor and hopes to return to school in October.

From this observation we may draw the following conclusions: First of all, we find ourself with a typical case of late hereditary syphilis. Some authors have sometimes hesitated to classify it under this title. Some manifestations of syphilis having begun in babyhood, have a tendency to reappear at about ten to twelve years of age. In this case there is no hesitation; the child did not show any syphilitic manifestations before the age of 12. It is also remarkable that it was impossible to find the least evidence. It is also to be noted that this case of syphilis shows some rare symptoms.

Prof. Fournier advises to diagnose carefully the initial forms of this infection because if the treatment is instituted in time the chances of cure are better. The symptoms which most frequently mark the beginning of a cerebral syphilis are epilepsy, headache, intellectual disturbance. Epilepsy is most often associated with the nervous phenomenon, that is, headache, vertigo, intellectual degeneration, disease, etc. Sometimes it reminds one of pure epilepsy but repeatedly, if we believe the numerous documents of Bourneville, it loses this type by the adjunction of various phenomena. In this case the epilepsy has always been isolated and that up to the end. It would be permissible to suppose that we had to deal with a so-called case of essential epilepsy because we did not know the cause thereof. This proves that cerebral syphilis may expose itself by epilepsy without any special symptoms and having apparently no connection with cerebral syphilis. It is not unusual to find a case of this kind subjected to the various treatments prepared for epilepsy while the real cure is neglected.

In this case the family has misled me and the absence of any signs had also contributed to mislead me, and that is a mistake, because in a case of epilepsy where the cause is unknown, a Wasserman test should always be made and even a therapeutic test should be instituted.

There is one more conclusion to draw from this report. The patient could not stand iodine medication. In the beginning he took it without any trouble but after a time the organism refused to absorb the remedy and from that time on all attempts at iodotherapy were followed with accidents.

Without looking for the cause of this intolerance about which we are far from being informed, let us state that it is quite frequent in children. Evidently it does not attain the intensity which was found in this case but it is common to find a child who does not bear iodine and frequently gastric troubles as well as eruptions interrupt a medication which is very necessary. Still the use of the remedy must be persisted and one must try to find a special preparation which will make it acceptable to the organism.

After numerous trials I have found a preparation called Iodostarine Roche. It is a fatty acid combined with two molecules of iodine which Prof. Arnand and Dr. Posternak have prepared while studying the isomerisation of unsaturated fatty acids. This substance contains 50 per cent iodine, may replace potassium iodide, and has this advantage for children, at least to be without taste and to go through the stomach without being decomposed.

My patient has stood this preparation very well, even after a continued use of 20 days per month; up to now he has not felt any of the inconveniences which iodine or its properties cause.—Progres Medical, June 14, 1913.

W. B. Saunders Company, Publishers, of Philadelphia and London, have just issued an entirely new eighty-eight page illustrated catalogue of their publications. As great care has evidently been taken in its production as in the manufacture of their books. It is an extremely handsome catalogue. It is a descriptive catalogue in the truest sense, telling you just what you will find in their books and showing you by specimen cuts, the type of illustrations used. It is really an index to modern medical literature, describing some 250 books, including 30 new books and new editions.

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RETROSPECT OF CURRENT PEDIATRIC LITERATURE

Infectious Diseases.

Under the Charge of

ST. GEO. T. GRINNAN, M. D.

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Serotherapy in Meningitis.—Giraud and Marnay (Annales de Medecine et Chirurgie Infantiles, Paris. Vol. XVII, No. 19), report a case of meningitis which developed in three stages; first, ten days of true meningitis, subsiding under serotherapy, followed by a period of six days almost free from symptoms. Then the temperature ran up again, the symptoms of meningitis returned and the parotid gland swelled. Then 20 c.c. of the anti-meningitis serum was injected, nine days after the first injection. No therapeutic effect followed but the next day diffuse urticaria developed, with pains in the joints and severe contractures resembling spastic paralysis. They persisted severe for several days and then gradually subsided so the child entered on his convalescence in seven days, a month after the first symptoms. This case is compared with other literature on the serotherapy of meningitis, and the disturbances that followed the serum are ascribed to direct irritation of the meninges by the serum; it is not necessary to invoke anaphylaxis. Disturbances of this kind have been noted even after a first injection; Sicard and Salin have reported cases in which the temperature ran up and headache, nausea and the Kernig sign followed an injection of saline or antimeningitis serum and necropsy revealed intense congestion of the pia with infiltration. The serum evidently induces an inflammatory reaction, but this generally escapes notice as it is marked by the more prominent symptoms of the orginal meningitis. The above syndrome cannot be ascribed to anaphylaxis, but it may be associated with manifestations of true anaphylaxis.

Scarlet Fever.—P. H. Kramer (Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam, Vol II, No. 10) reviews his experience at the Rotterdam contagious disease hospital with 910 cases of scarlet fever in the last four years. He states that in the last four months of 1912 there were 2,411 cases of scarlet fever at Amsterdam, with eleven deaths, while during the same period there were 358 cases at Rotterdam, with twenty-one deaths, the mortality thus being respectively 0.46 and 5.87 per cent. There was complicating otitis in 8.6 per cent. of his total 910 cases, and nephritis in 7.7 per cent. The diazo reaction was not found reliable in differentiation. In 2.1 per cent of the cases the disease returned or relapsed, once during the second week after supposed recovery and in three, seven and five cases in the third, fourth or sixth week. Thirty-one "return cases" are reported. In five instances the scarlet fever developed after an operation, but in one case did the eruption appear first around the wound. One woman developed scarlet fever the tenth day after delivery; no source of contagion could be discovered. Kramer states in conclusion that he found epinephrin very useful in tiding the patients past the danger point when the adrenals seem to be suffering acutely from the infectious-toxic process. The most serious symptoms observed in the syndrome he attributes to the lack of the normal adrenal secretion, and he gives epinephrin to combat this. Camphorated oil, also, alone or in combination with the epinephrin. proved surprisingly effectual in some of the more serious cases. He does not give any details as to his dosage or technic with either the epinephrin or the camphorated oil.

Otitis Media in Infants.—Strina (Gazzetta degli Ospedali e delte Cliniche, Milan, October 12, Vol. XXXIV, No. 122) states that he found evidences of otitis media in 70.9 per cent of the infant cadavers at the Venice foundlings' home. In the last ten years the mortality was 15 per cent., and in 152 of the 346 necropsies there was otitis media on one or both sides, the frequency thus being 44.70 per cent. Of this number about 78 per cent. of the infants were less than six months old. He calls attention to the anatomic conditions which permit infection of the ear from the mouth during delivery or later: the eustachian tube is broader. shorter and more horizontal than later in life, and it can readily become infected from matter forced into it in coughing, vomiting, etc. On account of this broad opening the ear trouble drains so that the membrane does not perforate as a rule: perforation was found in only four cases. In a few instances the infection was most probably of blood-borne origin. The otitis media was generally the work of ordinary germs, and the children thus affected were usually in poor physical condition. The otitis media was less frequent the older the infants, showing either that the ear trouble had healed or that the parts had become more resistant. The otitis evidently was primary in some cases and swallowed pus from it entailed gastro-intestinal disturbances. In other cases the primary lesion was in the intestines and the vomit containing infectious material led to involvement of the ear, either directly or by way of the blood. This was probably the mechanism likewise with primary lesions in the lungs. A remarkable feature of otitis media in infants, according to his experience, is the absence of involvement of the mastoid and intracranial region. He suggests in conclusion that deafness and deafmutism may be traced in some cases to unsuspected disease of the middle ear soon after birth.

Chronic Otitis Media.—D Schwabach (Berliner klinische Wochenschrift, Vol. L. No. 43), outlines in general the pathology and treatment of chronic disease of the middle ear. He says that even when it is possible to cure the old otorrhea and heal up the perforated membrane, yet generally the hearing is left permanently impaired. More frequent are the cases in which the suppuration seems to be cured but the perforation in the membrane does not close and thus it provides an opening for entrance of infection, bringing back the old trouble. He agrees with Wilde that so long as there is discharge from the ear we can never say how, when and where it will end nor to what it may lead. He gives directions for cleaning out the secretion. and says that Bezold's method frequently cures the old affection and in the simplest way. It aims to cleanse the secreting surface from all sepsis germs and exclude it from new influx of germs from the air. He accomplishes this by injecting a boric-acid solution until the outer passages and tympanum are cleansed. Then after thorough drying with the air douche, he insufflates finely pulverized boric acid and pours more into the outer passages which he then plugs with medicated cotton. This procedure is repeated as often as the cotton is moistened with secretion. Schwabach says that since he has been using this method he has had no need for local astringents, but he warns that it should be done by the physician and never given over to the patient. This method fails of course when there are other complications and he discusses the means to meet these.

Contagiousness of Infectious Diseases.—Szontagh (Medizinische Klinik, Berlin, Vol IX, No. 41) tells of a child who was visiting in a family where measles broke out a few days after her return home. He requested the mother of the child to take her temperature systematically as there was every reason to believe that she had been infected. This was done regularly and on the eleventh day the temperature was found slightly above normal, although the child seemed perfectly well and had no trace of nose or throat trouble. The child was immediately completely isolated and the disease ran its usual course. Eleven days later the child's four brothers all developed measles. The author states that the child could have infected her brothers only at the moment when the disease began, that is, when the temperature began to go up. The facts in this and similar cases indicate, he thinks, that the contagion must be air-borne and that it must emanate spontaneously from the infected child, which can occur only in the respired air. It leaves the mucous membrane of the air-passages before it shows signs of disease, and penetrates through the sound mucosa of the predisposed receiver. He argues to prove that the organism must be previously sensitized in some way or the virus will not cause the disease. The fact that the period of incubation is about the same for all the eruptive diseases suggests some close connection between them, also the fact that the causal agent for none of them has yet been discovered. Measles is spread by school infection, while his experience has been that this is not the case with scarlet fever; the incidence of the latter is greatest in August and regularly declines after October. The solution of the problem of the acute infectious disease lies, he is convinced, in the study of anaphylaxis. Why does a tonsillitis in one individual assume the form of scarlet fever and in another not? It is a well-known fact that an operation, a severe burn, trauma, overexertion or chilling may bring on an attack of scarlet fever. When sore throats are common, scarlet fever occurs more frequently. Another argument in favor of anaphylaxis as a determining factor is the occasional development of measles, for instance, in children apparently absolutely shut off from any source of contagion; he relates a number of instances of this.

Diphtheria Bacillus and Scarlatinal Infection.—T. S. Higgins (British Journal of Children's Diseases, London, Vol X, No. 119) states that he has isolated typical bacillus diphtheria from scarlatinally infectious "primary" cases in 25 per cent. of instances, but only in 7 per cent. of those cases of scarlet fever, and in 7 per cent. also among normal schoolchildren, he thinks, seems to show that the presence of this germ in the nose or throat of patients with scarlet fever is often associated with a prolongation of the period of scarlatinal infectiousness, and that the presence of the germ is indicative of an increased probability of such infectiousness.

Diphtheria.—J. L. Labberte and L. Talsma (Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam, Vol II, No. 13) state there were 130 cases of diphtheria in the last two years at Krommenie, with a population of only 4,000. A careful epidemiologic study of all the cases is here summarized. There was paralysis of the heart in 34 cases and seven in this group died; 15 cases of paralysis of the soft palate; 4 of accommodation, and 1 of the internal rectus muscle; 3 of the back and 1 of the calf muscles, but the paralysis did not prove permanent in any instance. On account of the apparent mildness of the epidemic, antitoxin was applied in only 42 cases and 20 of these children had paralysis in some form; in 4 the paralysis of the heart proved fatal. Of the 88 children not given antitoxin; 3 died of cardiac paralysis of the 11 who had paralysis in some form. Of the 12 given antitoxin the first day, 6 developed paralysis and 1 died. Of the 17 receiving the antitoxin the second day, 8 developed paralysis and 2 died of cardiac paralysis. Of the 13 children who are given antitoxin at a still later date, 6 developed paralysis and 1 died from heart failure and 1 from the severity of the diphtheria. The paralysis seemed to occur in waves during the epidemic, some periods furnishing far more cases than others. Ninety-five bacillus carriers were found among 1,378 children tested for the bacilli. The carrier children were dismissed from school but no instance of infection from them is known. The epidemic, however died out when the schools were closed. A number of the throat smears were negative at several examinations but later gave positive findings.

Scarlatinal Heart and Kidney Complications.—Baginsky (Berliner klinische Wochenschrift, Vol. L, No. 42) reports some cases and expatiates on the benefit from sweating procedures in the moderately severe cases. They not only arrest by mechanical means the congestion and tendency to suffocation from the hydrops, but they relieve the heart and respiration by the diuresis induced. A typical case is described in which the temperature was 105 at first but dropped at once after venesection, and the sweating procedure completed the change for the better. When the temperature keeps high, these hot sweating procedures are contra-indicated as fraught with too much danger, and cold packs should be given the preference, leaving the child for an hour or two to sweat in the cold pack. In a typical case reported, a month after scarlet fever, the symptoms of uremia, dilatation of the heart, hydrops, high fever and severe dyspnea, subsided under the cold pack in which the child, a little over 3 years old, was left to sweat for a time. It seemed to have a direct life-saving action. He advises but one such pack a day, and he warns that as children react more vigorously to therapeutic intervention than adults, the pediatrist must be even more cool and cautious than at the bedside of adults.

Diphtheria Bacilli-Carriers.—Markl and Pollak (Wiener Klin. Wochenschrift, Vol. XXVI, No. 40) in a report from Trieste state they found extremely virulent diphtheria bacilli in the nasopharyngeal secretions of four out of ninety-one healthy persons examined free from known contact with diphtheria. In six other cases bacilli were found which apparently could be distinguished from true diphtheria bacilli only by their lack of virulence. The tellurium plate proved most reliable for cultivating the bacilli, but they state that none of the usual morphologic differential criteria are absolutely dependable.

Diseases of the Respiratory System

Under Charge of

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Fatal Illness in Children Associated with Acute Interstitial Parotitis.—M. H. Gordon, (Lancet, Aug. 2, 1913) describes four cases under observation in the postmortem room at St. Bartholomew's Hospital during the past few months. All were children. All had died after a short illness in which the symptoms pointed to meningoencephalitis. Postmortem, meningeal congestion was found in all the cases, and in two of them there was flattening of the convolutions and other evidence of increased intracranial pressure. In all alike no pus was present in the meninges. There was no evidence of tuberculosis in the meninges, brain, or elsewhere. The cerebrospinal fluid was clear and contained an excess of lymphocytes, but no visible bacteria. Sections of the cerebral cortex and of the cord failed on microscopic examination to yield histological evidence sufficient to justify a diagnosis of poliomyelitis. The lymphatic glands both in the neck and mesentery were swollen. In two cases the lymphoid tissue in the small intestine was more prominent than usual, this change being most marked in Peyer's patches in one case, and in the solitary follicles in the other. In two of the cases petechial hemorrhages were seen; in the first in the parietal pleura and visceral pericardium, and in the second on the under surface of the liver and beneath the capsule of the kidneys. In all the children both heart's blood and cerebrospinal fluid failed to show growth on agar. Although the salivary glands were not obviously enlarged and had given rise to no symptoms, they were found in all the four children to show on histological examination foci of acute inflammation—chiefly interstitial in distribution. The writer believes that these children met their death as the result of the unusual action of the virus of mumps.

The Management of Acute Bronchitis in Children.—Sutherland states that if the early stages as often happens there is a dry irritating cough, the indication of increasing bronchial secretion by the inhalation of steam may give great relief. If there is dyspnea for bronchial spasm hot fomentations to the back and front of the chest are indicated. In mild cases of bronchitis no other treatment is necessary than to apply to the chest some stimulating liniment. In more pronounced cases the bowels should be freely opened at the outset of the attack and a simple febrifuge mixture should be ordered, such as the following:

℞ Potassium citrate, 5 grains.
Tincture of orange, 5 minims.
Solution of ammon. acet., 15 minims.
Camphor water, ad 1 dram.

As regards cough mixtures, it is pointed out that these tend to upset the digestion. If bronchial secretion is defective and there is a harsh, irritating cough iodide of potassium and carbonate of ammonium may be given in doses of two grains each. If bronchial secretion is over abundant the following may be given:

℞ Tincture of belladonna, 4 minims.
Dilute nitrohydrochloric acid, 3 minims.
Glycerine, 10 minims.
Comp.infusion of gentian, ad 1 dram.

If special sedatives seem called for, a convenient form of administration in children is the use of pastilles containing one fiftieth of a grain of codeine. In the convalescent stage cod-liver oil and hypophosphites give the best results—"The treatment of Diseases in Children."

Partial Chronic Adrenal-Insufficiency in Children.—The author points out that there may occur in childhood, either spontaneously or as a sequel of some acute disease, slightly marked but persistent disturbances which at length react seriously on the general state and growth of the child and which are due to partial insufficiency of the adrenal function. In very young children thus affected, development in weight and height is at a standstill, the muscles are flabby, walking is delayed, and the child is apathetic and at times som nolent. Adrenal therapy or the simple administration of small doses of epinephrin bring about more or less rapid cessation of these manifestations. In somewhat older children retarded growth in height is the most marked phenomenon. In boys, before puberty, there is noted a condition of apathy, fatigue, and physical and mental indolence. The child grows thin and the blood-pressure is low. Administration of adrenal preparations under these conditions renders the boy more alert and leads him to work better and suffer less fatigue; the blood-pressure rises and the body weight and stature augment in a few months. Manifestations such as those described may, of course, be due to other conditions, but the benefit accruing from adrenal therapy in many cases would seem to indicate a specific deficiency on the part of the corresponding organs.—D'Œlsnitz, Presse Medical.

Initial Localization of Pulmonary Tuberculosis in Children.—Charles Lenoux (Arch. de med. des enf., Sept., 1913) says that in the nursling and the young child it is not toward the apex but toward the base of the middle of the lung that we should seek for early signs of infection in most cases of tuberculosis. Clinical examination is not sufficient to show this focus; physical signs are absent, and only radiography and radioscopy are of assistance. The new-born child and the nursling resist tuberculosis badly; it is only at two years and over that we can follow its ulterior evolution. By repetition of clinical and radioscopic examinations in the same child for months and years is it possible to follow the evolution of tuberculosis of the lungs and lymph nodes which consists of three stages, rapid or slow. There is infection of a lung in some location, base, middle, rarely apex, adenopathy at first single, then double. Next there is tracheo-bronchial adenopathy, more or less latent, lasting some months or years. Next comes a phase of reinfection of the apex, and classical evolution of chronic pulmonary tuberculosis. It is the early infection of the young child that brings about many of the tuberculosis of the adolescent and even the adult, through tardy reinfection of the apex. In larger children, especially at twelve years or more, we may observe an inverse evolution. In these cases the infection seems to begin, as in the adult, at the apex; here the adenopathy is secondary and more or less late.

Diagnosis of Tuberculosis in Young Children.—Jeanneret's long article gives the results of four years of study of the skin and intradermal tuberculin tests as applied to 1,012 children. Each child was treated on one arm with the tuberculin technic according to Pirquet and on the other arm by the intradermal method according to Mantoux's technic. In the first series of 900, in 814 of 840 tests the findings were concordant on both arms. In 735 cases there was no reaction, that is, both tests were negative; in seventy-nine cases both were positive, and in twenty-six cases the intradermal (Mantoux) was alone positive. In thirty-seven of the 735 negative cases the children died, and necropsy revealed no trace of tuberculosis in thirty-five. But in two children giving a negative reaction advanced tuberculous lesions were found. This contradictory finding is readily explained by the fact that the children were practically moribund when the test was applied; the body was unable to respond with the specific reaction. In a further series bringing the total number of children to 1,012, with over 5,000 intradermal tests, the absolute harmlessness of the intradermal technic was abundantly confirmed. The reaction is absolutely specific, revealing in the body an active, torpid or healed tuberculous focus, without fail unless there is some acute infectious disease at the time or cachexia preventing the formation of antibodies. The younger the child the more significant a positive reaction. The experiences related sustain the assumption that the size of the focus of the reaction is proportional to the intensity of the tuberculosis. He always measures the diameter of the central papule of the Mantoux reaction, recording this and in parentheses the diameter of the halo of redness around it, when there is a halo. By this means it is possible to obtain quite an insight into the extent of the tubeculosis. With merely tuberculous lymph-nodes, the intradermal reaction was a papule not over 1 to 7 mm in diameter, except very rarely when it ran up to 14 or 15 mm. With a tuberculous focus in a lung, on the other hand, the intradermal reaction formed a papule from 8 to 20 or even from 25 to 30 mm. in diameter. The Mantoux techic is exceptionally simple and easy; pushing up the child's sleeve, the little injection can be made in a fold taken up in the skin, with an exact dose of the tuberculin (0.0001 c.c.), and the child requires no further supervision. With the Pirquet, the child has to be watched afterward to see that the tuberculosis is not wiped off, and there is never any knowledge as to the exact proportion absorbed. Jeanneret cites ten clinicians who insist that the intradermal technic has all the advantages of Pirquet's skin test while the response is quicker, more distinct and more reliable, although after the age of 7 only the negative findings with either can be regarded as decisive. Jeanneret applied the test every two weeks in a number of cases to control the effects of treatment. The reaction grows less as the child improves. The Mantoux immunity thus acquired sifts out the children who will respond favorably to tuberculin treatment, and the response also serves as a guide for the dosage. Ab . J. A. M. A. 8-2-13.

Acute Primary Diphtheritic Pneumonia.—O. David (Munchener medizinische Wochenschrift, Vol. LX, No. 42) reports the case of a boy of 9 was taken with what was apparently pneumonia of the left lower lobe terminating in a crisis and followed by slight pleurisy. The child was apparently doing well when suddenly he seemed to be suffocating but was relieved by inhalation of oxygen and epinephrin. A pneumonia process had developed in the right lower lobe and the bronchi and trachea became obstructed so that an emergency tracheotomy was required. Diphtheric membranes were expelled through the opening; antitoxin was injected but the child died the thirteenth day after his first symptoms. Diphtheria bacilli were found in the lungs and air passages in pure cultures.

Diseases of the Alimentary System.

Under the Charge of

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Diarrhoea Due to Carbohydrate Indigestion.—Hutinel advises, in the treatment of this condition as met with in children, the administration of kefir or buttermilk, and perhaps a little unfermented cheese. Raw lamb or horse meat—the latter preferable to raw beef, owing to the possibility of acquiring tenias from raw beef—are often well taken and digested. The meat should be carefully chopped up or made into a pulp, covered with powdered sugar, mixed with fruit jelly or added to a small amount of skimmed bouillon. The quantity of meat given should be at first ten to twenty grams, according to age, then increased by one to three grams a day up to twenty-five, thirty, forty or even fifty grams. Sometimes the appetite will disappear in a couple of weeks and the stools become more malodorous. The raw meat should then be reduced or discontinued and a little lean ham or cooked lamb or chicken, chopped up, or a little boiled fish, tried. Where meat in general is badly taken, peptone or meat jelly may be given tentatively. The carbohydrate intolerance being typically of brief duration only, an attempt should soon be made to return to this class of foodstuffs. at first in soluable forms, beginning with malted gruels then giving noodles, vermicelli and macaroni, and finally, gradually adding the well cooked purees, especially of potato. In cases associated with colitis a prompt return to starchy foods is particularly necessary.

Serum Sickness.—L. Axenov, (Jahrbuch fur Kinderheilkunde, Berlin, Vol. LXXVIII, No. 5), reports 683 cases of serum sickness at the children's hospital in St. Petersburg and all followed the treatment of scarlet fever with Moser's serum. In the course of seven and one-half years this form of serotherapy was applied in 1,200 cases, and serum sickness followed in 57 per cent of them, not counting those who died too early for serum sickness to have appeared. It was much more frequent in children under 5 years of age than in older ones. There were twenty-one deaths (3 per cent) due to serum sickness alone. There were thirty-seven others in which besides the serum sickness there were other complications of scarlet fever, making the mortality 8.5 per cent. The serum sickness increases the severity of the complications. Serum theatment for scarlet fever should, therefore, be used very cautiously and only in the severest cases. The symptoms are fever, enlargement of lymph-nodes, joint affections, edema, uricaria and albuminura. The measures applied in prophylaxis were without result.

Summer Diarrhea in Infants.—Epstein (Medizinische Klinik, Berlin, Vol. IX, No. 38) argues that a number of causes cooperate in the production of summer diarrhea, but admits that it is possible for infants to suffer from the heat-stroke the same as adults. Excessive heat not only leads to the spoiling of milk but it produces favorable conditions for infections. At the same time, his own experience has been that with good hygiene the mortality need be no higher in the heated term than at other times. In reviewing his experience he states that during the year 1880, 35.5 per cent of the 484 children who died out of the 2,978 admitted to the old foundling hospital in his charge, succumbed to intestinal trouble. In 1900 the new building was occupied and at once the mortality dropped. In the thirteen years since, 820 have died of the 18,311 infants admitted; 27 per cent., of the deaths occurred January to March; 31 per cent., April to June; 22 per cent., October to December, and only 20 per cent., July to September. During the intense heat of July and August, 1911, only four infants died and none from gastro-intestinal trouble; two were feeble prematurely born, one died of erysipelas and the fourth from meningitis.

Measured Feeding for Older Children.—William R. P. Emerson, (Medical Record) recommends that more attention be paid to the feeding of older children, particularly when they are underweight. He prefers the the caloric percentage method of estimating food values proposed by Fisher, in which tables are prepared showing the amount of each food necessary to furnish 100 calories. A slice of bread, a pat of butter, the lean meat on a lamb chop, five ounces of milk, one slice of bacon; each has a value of 100 calories. A child from six to fourteen years of age and from ten to twenty pounds underweight needs between 2,000 and 3,000 calories of food per diem to obtain the proper gain. Both physician and parents need an adequate knowledge of food and food values, then the cooperation of the child is necessary, which may be obtained in boys by appealing to their ambitions in athletics, in girls to their attractiveness. The child then keeps a forty-eight hour record of all food eaten, which will show how much food is habitually taken, as well as its kind, and reveals the likes and dislikes of the child. With this as a basis, if the calories are below 2,000 a day, variations may be made in such a way as to bring the number of calories up to or above the desired amount. Then if the child does not increase in weight it is because he is suffering from some organic disease. Children underweight seem to have a remarkable ability to digest food, taking as high as 3,500 calories without digestive disturbances. Measured feeding shows almost invariably that a child without organic disease is underweight because he does not eat enough, and overweight because he eats too much. When children are overweight, symptoms of indigestion disappear in a remarkable manner with a diminution of the day's ration. Balanced diet, a proper proportion of protein, fat and carbohydrates, needs attention only in a general way in health, as taste regulates this in most instances. Changes in diet should be made gradually along lines of least resistance. Quite a list of foods is appended giving the food values of each.

Tuberculosis Following Typhoid Fever.—C. E. Woodruff (American Medicine) quotes statements of certain authorities and statistics indicating the previous occurrence of typhoid in cases of tuberculosis, and says that other facts show a relation between the two affections. For instance, the mortality curve of tuberculosis, which rises rapidly from childhood, reaches its mamimum before thirty and declines after thirty-four years, while the maximum of typhoid is reached at fifteen and declines after twenty-one. The curve of tuberculosis seems to follow that of typhoid after an interval of about nine years; the average length of life after tuberculosis becomes evident is said to be seven years. It might mean that typhoid, contracted before twenty-five or thirty, is partly responsible for raising the mortality from tuberculosis nine years later. It is significant that males predominate in deaths from diseases. Where typhoid is prevalent there should be more tuberculosis, and variations in the typhoid death rate should be followed by similar variations in the tuberculosis death rate. These propositions seem to be proved by a series or charts of death rates in the Office international d'hygiene publique in Paris. The curves of the two diseases show more or less parallelism throughout the civilized world. Unfortunately, measles and whooping cough, which with typhoid seem to be most frequently followed by consumption, were not considered of sufficient importance to record. The author goes on to state that one of the most remarkable instances of the reduction of tuberculosis is in the British army. All other armies show a similar reduction; though not to such an extent as the troops in India. In the United States army the dependence of tuberculosis is seen after 1890, when bacterial diagnosis had become common; but in 1911 tuberculosis ceased to decline with the typhoid. Health authorities of New York and Pennsylvania have reported that typhoid and tuberculosis have markedly declined in there respective States in recent years, and at about the same rate. Cities do not show the same accurate correspondence between the two diseases as the country at large and none of the curves is as regular as in cities and countries of the old world, where the census is more frequently taken. Tuberculosis rates in the table presented, with figures for the principal cities of Europe and the United States, show a tendency to rise and fall with typhoid.—Medical Record.

Periodic Spasm of the Descending Colon in Children.—Hutinel reports (Presse Medicale) a series of cases of this condition which occurs especially in children, four to fourteen years of age, the offspring of neuropathic, arthritic and frequently diabetic parents. The past history usually includes digestive disturbances more or less severe, particularly recurring at attcacks of colitis. Hepatic insufficiency is sometimes indicated by the symptoms. Constipation almost always precedes the attack of colonic spasm; appetite is lost, the tongue coated, and the breath fetid. Pain suddenly develops in the left flank, localized anteriorly, occasionally posteriorly and at the epigastrium. Palpation reveals the descending colon in spasm, the bowel at this level feeling like a rope or rubber tube; the splenic flexture and transverse colon are also at times in spasm, and between the points of tightest contraction, gurgling may be felt. Passing of the spasm is marked by a sudden cessation of the pain and free evacuation of feces, at first hard and of small diameter, later mucoid, and occasionally blood stained, and nearly always malodorus. Weight is rapidly lost during periods of spasm, but is son regained, the child appearing healthy during the intervals. At times there is appendicular tendencies; the appendix may become diseased as a result of the functional colic disturbances, and when once involved, tends to perpetuate the colonic trouble. The abdomen is often retracted during the attacks, and at times pyloric spasms coexist, as shown by bismuth meal and Xray examination. The periodicity of the spasmodic attacks is very noticeable, and the condition seems to be analogous to bronchial asthma and cyclit vomiting; in fact, spasmodic rhinitis and asthmatic attacks were observed sometimes as accompaniments of, or in alternation with the paryoxysms. Treatment of the attack is effectual and consists in applying very hot compresses to the abdomen and giving cautiously small hot enemas. As a sedative, belladonna, with or without opium, may be used. Vichy water and hot beverages should alone be permitted, and at the close of the attack castor oil in small doses or sodium sulphate given. The interval treatment consists of daily massage of the abdoman, application of large cold and moist compresses, rubbing of the whole body, gymnastic exercises, and the use of mild laxative drugs by mouth and rectum. The diet should be rich in carbohydrates.—Medical Record.

Orthopedic Surgery

Under the Charge of

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Principles of the Treatment of Infantile Paralysis.—By Robert W. Lovett, Jour, A. M. A., Jan. 24, 1914. The diagnosis of this disease before the appearance of paralysis is difficult or even impossible except during an epidemic of the disease. The want of an early diagnosis probably has no effect upon the course of the disease, although it is possible that the administration of hexamethylenamin before the onset of the paralysis may have a value in aborting or lessening the symptoms.

Since the pathology of the disease is essentially a hemorrhagic myelitis and a meningitis, the treatment of the acute stage should consist chiefly of absolute rest. But we should re collect that the outcome of the cases is not entirely determined by the course of the treatment, as twenty-four per cent recovered during the 1907 epidemic in Massachusetts irrespective of treatment or lack thereof.

The period of convalescence begins when fever and, particularly, all tenderness have ceased. No active treatment should be instituted until this time arrives, except to maintain the parts of the body in such position that no deformity shall arise. But with the disappearance of tenderness, unless such should occur before the end of four weeks from the onset of the disease, active treatment must be begun and carried out patiently, systematically, and thoroughly. Skilful massage should be so employed as to strengthen and not to injure the soft muscles. Active exercises and muscle training is the most efficient procedure. Electricity is of doubtful value and its use may only serve as an excuse for the neglect of the various methods of active muscle training. Apparatus and braces are to be used to prevent deformity from malposition and to enable the child to walk about as soon as possible.

If fixed deformity already exists, it must be corrected by operation if necessary.

In the final stage of the disease after improvement has ceased further operative procedure should be employed to improve muscle function or to secure stability of flaccid joints.

Finally, it may be said that the present methods of treatment show considerable advance over those employed a few years ago and produce frequently eminently successful results.

The Function of the Periosteum in Bone Transplants, Based on Four Human Transplantations Without Periosteum, and Some Animal Experiments.—By McWilliams, Surg., Gyn., and Obstet., Feb., 1914. Axhausen says that the bone in a graft always dies and is absorbed and is replaced by bone generated by the periosteum which is the only part of the graft to remain alive. Macewen maintains that bone growth occurs from the osteblasts within the bone of the graft and is independent of the periosteum which serves only as a limiting membrane. Murphy states that the graft is not osteogenetic but simply serves as a scacold along which bone grows from other living bone with which the graft must be in contact at one or both ends.

McWilliams' experiments together with the results of four clinical cases demonstrate, he maintains, that Macewen and Murphy are both wrong in stating the periosteum has nothing to do with maintaining life in the graft, and that Murphy is furthermore wrong in saying that the graft is not osteogenetic in itself. McWilliams maintains that the fate of the graft depends on its blood supply, irrespective of periosteum or of contact with other living bone. But the presence of the periosteum on a large graft aids tremendously in securing a proper blood supply to the graft. And, furthermore, if the blood supply to the bone of the graft is insufficient to maintain the life of the osteoblasts in the bone, yet the periosteum may receive sufficient blood supply to maintain its life and to produce bone regeneration from its inner osteogenetic layer. Periosteum when transplanted alone into soft tissues may produce living bone. The splitting of the periosteum in a bone transplant is unnecessary.

The author states that it must be concluded that in any bone transplant of whatever size as much periosteum as is possible should be left on the transplant.

The Treatment of Flatfoot.—By Grafe. Med. Council, March 1914. The author states that flatfoot is due to the want of use of the anterior part of the foot in walking. To cure this condition the plantae muscles and ligaments should be developed by exercises and by a proper method of walking. Shoes with flexible soles should be worn. Patients should walk on their toes in their bare feet while at home; and, when in the streets, they should walk as much as possible on the ball of the foot and as little as possible on the heel.

Madelung's Deformity.—By Adler, Cal. State Jour. of Med., March 1914. This deformity consists of a forward subluxation of the wrist. The radius and particularly the ulna project on the dorsal surface. There is a deviation of the articular surface of the radius toward the palmar surface, accompanied usually by a dorsal bowing of the radius. The deformity is usually bilateral and is more frequent in females than in males. It occurs spontaneously during the period of growth between the thirteenth and the twenty-second year of age. It is accompanied with but slight pain, weakness, and limitation of motion.

The author records one case that he has observed. A thorough presentation of the subect of Madelung's deformity was made by Stetten in surgery, gynecology, and obstetries in Jan. 1909.

Paralytic Toe-drop, Puttis' Operation for its Relief.—By Pugh. Annals of Surg., March 1914. In Putti's procedure to correct paralytic foot-drop the anterior tendons of the foot are converted into ligaments to support the foot at a right angle to the leg. The tendons are exposed above the ankle and are divided from their degenerated muscles. The ends of the severed tendons are then passed through a hole drilled through the crest of the tibia and are sutured to one another and to the periosteum, while the foot is held at a right angle to the leg.

Pugh fears that this operation may result in a condition of hammer-toe when the plantar flexors of the toes are strong. Therefore, he modifies Putti's operation by either cutting the dorsal tendons of the toes near their insertion and transplanting them to the ends of the metatarsal bones or by burying them beneath the penosteum of the metatarsals and bearing their attachment to the toes intact.

BOOK REVIEWS

Geriatrics. The disease of old age and their treatment, including Physiological Old Age, Home and Institutional care, and Medico-Legal relations, by I. L. Nascher, M. D., New York, with an introduction by A. Jacobi. 508 pages with 50 full page plates and 81 illustrations, Handsome cloth bindings, $5.00 net. P. Blakiston's Son & Company, Philadelphia, Penn.

Senility is often aptly alluded to as second childhood. A comparison of the organism in childhood with the organism in old age will show that there is not an organ or tissue, not a function, mental or physical, identical at the two periods of life, consequently a work on Old Age appearing at this time is welcomed, since this is the first distinctly American work to appear on the subject. The spirit of veneration of ancestors and the aged, such as exists in China, does not exist among us; and it is with the hope of arousing an interest in Geriatrics that prompted Dr. Nascher to write this book. He trusts that a study of the subject will stimulate research into the causes of senescence and the pathology of senile disease.

Doctor Nascher in arranging his subject matter has deviated somewhat from usual custom and grouped his subject matter into sections rather than chapters. viz Physiological Old Age, Pathological Old Age,—the latter including Primary Senile Diseases, Secondary Senile diseases, modified diseases of old age, preferential diseases of old age, diseases uninfluenced by old age & etc. There are also extended references to the home care of the aged, institutional care of the aged, medico-legal relations, sexual perversions and Malingerers.

The Author has arranged a wealth of detail contrasting the conditious surrounding childhood and old age, the study of which will prove interesting to most of us, for it really opens up a new line of thought, in new, and almost untrodden feilds. It is on this foundation that Dr. Nascher has builded his superstructure and has adorned it with a word picture of the senile state. A most pathetic picture, to be sure, yet we hope its study may in time benefit the poor and neglected in our homes for the aged and infirm. "While the dependence of the child arouses sympathy, in the aged the repugnance aroused by the pitiful though disagreeable facial aspect and the idea of ecnomic worthlessness destroys the sympathy we bestow upon the child and instills a spirit of irritability if not positive enmity against the helplessness of the aged."

The study of the causes of "ageing" or the question why we grow old, or rather why, after a period of physical perfection the organs and tissues degenerate and their functions weaken and become unable to maintain the harmonious interrelations necessary for life are forcefully set forth in a masterful section of this work. This section is most ably written and teaches a most serious lesson and deserves most thoughtful and careful study.

It would be impossible to do justice to this work of 500 pages in a short review; we can only mention the more important features of the work. The author's classification is new. Lengthy descriptions are avoided, minute pathology is generally omitted and only the essential symptoms necessary to differentiate clearly one disorder from another are recorded.

We heartily commend this work to all earnest men not only for the wonderful story unfolded, but for its helpfullness, as a guide to the physician, and the humane worker, that the last days of the aged may be made tolerable.

The New Pocket Medical Formulary, by William Edward Fitch, M. D., First Lieutenant Medical Reserve Corps U. S. A., Editor of "Pediatrics" formerly lecturer on surgery, Fordham University, School of Medicine; Assistant Attendant Gynecologist, Presbyterian Hospital Dispensary; Attending Physician to Vanderbilt Clinic, College of physicians and surgeons, New York City; member of American Medical Editor's Association; member of the Medical Association of the Greater City of New York, etc., second edition revised, pocket size 450 pages bound in handsome limp morocco. Price $2.00 net. F. A. Davis Company, 1914-1916 Cherry St., Philadelphia, Pa.

The call for the second edition of the new pocket medical formulary in such a short time bespeaks its popularity with the profession. There are quite a number of formularie's on the market, almost all similar in their make-up, the only difference in many is in the kind of formulas selected, the compiler seldom incorporating much from his personal experience. The present little book, however, is an exception to the rule, and appears to be one of the most carefully prepared books of the kind that has ever been brought to our notice. A point worthy of special mention is the clinical hints following the headings of the more important diseased conditions. The double system is cross-indexing, facilitating rapid reference to other sections having a corresponding relation to the disorder under consideration is another valuable point. The extensive table of differential diagnoses of maladies easily confounded is another unique and exceedingly valuable feature. The diet lists for diseased conditions are usually complete and from another valuable feature of the work.

The author has been very conservative in the formulae which he has selected for use in the disease under which they are listed. In most cases he has given them a trial, and is therefore in a position to recommend this or that prescription from actual experience and observation. The drugs are given with their Latin names conforming with the latest revision of the U. S. Pharmacopoeia. The dose in each formula is given in both the metric and apothecaries system. In many, in fact most of the prescriptions the source is given with the author's signature.

The appendix is a very valuable part of the book containing directions for preparing liquid foods, dose table, it also contains a reliable table of weights and measures, therometer scales, gestation table incompatibilities and baths. Altogether it is a very complete multum in parvo for nearly the entirely list of diseases arranged alphabetically. To the student and practitioner alike this little "Pocket Practice" will be found especially helpful "over many had places."

Its frequent consultation will stimulate in the younger practitioner the habit of prescribing pharmacopeial preparations rather than writing for proprietary substances of unknown composition. A ready reference book cannot but be of great assistance, and this little edition of short-cuts, is excellent, as the information given is clear, well defined and authorative and can be depended upon by the modern practitioner, to whom it is heartily commended. Geo. M. Norton, M. D.

Practical Sanitation, A handbook for Health Officers and practitioners of medicine, by Fletcher Gardener, M.D., Captain Medical corps, Indiana National Guard, first Lieutenant Medical Reserve Corps, United States Army, Health Commissioner of Monroe County, Indiana, and James Persons Simonds, B. A., M.D., professor of preventive medicine and bacteriology, Medical department, University of Texas; lately superintendent, Indiana State Laboratory of Hygiene, Illustrated, 380 octavo pages, 37 illustrations cloth binding, $4.00 St. Louis, C. V. Mobsy Company 1914.

This book is intended as a guide for health officers and practitioners, and fills a vacancy in Medical literature. Up to the present, there has never been a serious endeavor to provide within the covers of a single moderate-priced volume, a plain, non-technical exposition of the duties of the health officer, written by one experienced in the routine and emergencies of the local sanitary service and familiar with the needs of the local health officer. It is compiled from many sources, and, while it contains much of the personal observation of both authors, it is perforce comparatively original, since it must present the established views and methods in combatting disease and not ideas of the future. It aims simply to provide a safe way for the health officer to meet any emergency which may arise. Since sanitary officials in small places out of the reach of libraries are most in need of such a work, and since they are illy paid the authors have endeavored to provide a book at a moderate price. Hence much that is of interest to the expert has been excluded, while much that to him is axiomatic has been included.

The subject of quarantine is gone into very carefully and explicitly, special attention is given to examination of schools, outlining the duties of the health officers, the management of campaigns for the extermination of rats, flies, mosquitoes, bedbugs and other vermin that may serve as disease carriers. Part 1 embraces epidemiology, and part 2 sanitation, these are the work of Dr. Gardner, with the exception on the chapters on milk and water, which with part 3, is the work of Dr. Simonds. It is a volume that should be in the hands of every health officer, physician and sanitarium.

L'enfant et son Medecin par Dr. Albert B. Ball, Deuxieme edition eugmentee A. Maloine, Editeur; Paris 1914.

This practical guide upon the diseases of children emanates from the pen of one who has made many researches in the field of pediatrics. The initial pages are devoted to the study of dosage, as laid down in the French Codex; this comprises a list of the more important drugs. The physiology of childhood is succinctly told and there is a very instructive chapter dealing with the strength, preparation and the indications for the employment of drugs. There is a good chapter on artificial feeding; and the use of agents other than drugs, as, electrotherapy, massage, lavage, etc., are all discussed. The "Dictionnaire Medico-Chirurgical" is a repository of the diseases of children medical and surgical, and contains much information on special subjects, such as neurology, orthopedic surgery, otology, etc. There is appended a directory of places suitable for the invalid, a list of the best mineral springs, of institutions for special affections, such as those of an orthopedic character, the addresses of manufacturers of reliable medical merchandise, such as, bandages, ceintures, various foods, food products, etc. The book illustrates that oft quoted expression a "multum in parvo," contains 379 pages, 4 in. x 8 in.;" is printed on substantial but remarkably thin paper, is only ½ an inch in thickness, weighs a few ounces and can easily be carried in the pocket.

The Practice of Pediatrics.—By Charles Gilmore Kerley, M. D., Professor of diseases of children, New York Polyclinic medical school and hospital. Octavo of 878 pages, 139 illustrations. Philadelphia and London. W. B. Saunders Co. 1914. Cloth, $6.00 net; Half Morocco, $7.50 net. W. B. Sounders Co.

Since a large proportion of every physicians practice is Pediatric work it very essential, therefore, that every practitioner be in touch with the latest advances in the treatment of diseases as it presents in children. For this purpose we know of no better work than Kerley's new Practice of Pediatrics. This handsome volume embraces a full and complete knowledge of the subject of Pediatrics, containing a well balanced presentation of Pediatric science and practice.

The author devotes sufficient space to bacteriology, pathology, and etiology, leading up to a full and satisfactory consideration of the more directly practical subjects of symptomatology and diagnosis, including differentiation and treatment. When the age has a bearing upon the course of treatment, the treatment for different ages is clearly indicated. The first chapters of this work covers such general subjects, as clothing for the infant, bathing, management, sick room, etc. Then follows chapters on diseases of the new born.

The section of infant feeding presents the latest information on the subject and in a manner that is simple, easily grasped, and readily put into practice. There is a truism in the statement that "food may be chemically right but physiologically wrong" and that "each infant is a law unto itself except concerning the form in which it prefers its food." Here are also most ably considered the care of the mothers breast, artificial feeding, milk modification, and diet for older children. The chapter dealing with infant feeding and nutritional disturbances reflects in a very conservative manner the recent advances in our knowledge of that subject.

The chapter on nervous disorders of children is a very satisfactory resume of the latest teachings on this subject. The chapter on vaccine therapy is right down to the minute, including every new method of proved value including the exact measures other than drugs and an excellent discussion on gymnastic therapeutics containing explicit directions for the correction of certain abnormalities. The pediatrician general practitioner, and advanced student will find in this volume, discussed systematically and in detail every disease of childhood, advising just what measures should be instituted, what drugs given and in many cases valuable prescriptions are included. The work closes with a charter devoted to the dosage of drugs for internal use from the sixth month to the fifth year, and a table of remedies for external use giving their names and methods of preperation.

In truth this is a text-book for the children's specialist and the general practitioner, very explicit in instruction and offers the well informed medical man a repertoire of the science and art of Pediatrics. The publishers recognise the great value of the work and give to it all the art in book-making and book-binding for which they are justly famous.

The Pathogenesis of Salvarsan Fatalities.—Authorized Translation by Clarence Martin, M.D., First Lieut. M. R. C., U. S. Army; Late Clinical Assistant St. Peter's Hospital for Stone and other Urinary Diseases, London; Member Association Military Surgeons, Berlin Urological Society, etc. St. Louis, Mo.

Dr. Clarence Martin, the translator, has assumed a task which is executed with credit to himself and the profession. Just what role salvarsan and its companion preparation neosalvarsan are to play in the future therapeutics of syphilis, is, as yet, an unsettled question. A great many fatalities are being recorded as a result of the administration of this product. The clinical investigation of the author of this work will help to determine the future of this newly heralded specific for syphilis. The author's experience with salvarsan entitles his conclusions to the most respectful consideration, and his investigations into the causes of salvarsan fatalities will largely aid in determining the degree of toxicity of this product.

Whilst it is true that conclusions reached at the present time are subject to revision, for, confessedly, the last word on salvarsan is far from having been written, therefore, it is safe to assume that much of our present day knowledge of salvarsan-therapy is sound and worthy of reliance. The translator believes that all physicians interested in the treatment of syphilis by means of salvarsan and neosalvarsan, will find much food for thought within the pages of this little book. The author's guiding finger, throughout these pages, point to greater caution in salvarsan-therapy.

The only objection found to this book is that the paper on which is is printed is too stiff for convenient handling. The binding is well done and very substantial.

PEDIATRICS

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EDITORIAL

FAULTS AND FALLACIES IN INFANT FEEDING

According to J. S. Fowler, M.D., F.R.C.P., in the Practitioner's Encyclopedia of Medicine and Surgery, some of the misconceptions which consist in connection with this subject are as follows:

(1) That it is possible to devise a substitute food as good as human milk. The more we learn about the subject, the more clearly does it appear that it is impossible to prepare artificially any food which is more than a rough approximation to human milk. Milk is something more than ordinary food; it is a specific food, and the milk of every species of animal is specifically adapted to the needs of the young. The variations in the composition of the milks of different animals are nature's adaptations to her own ends, and probably besides the variations we know, others quite as important escape us entirely. Notwithstanding much painstaking research, nobody has yet discovered what particular component of cow's milk renders it indigestible by many infants.

(2) That fresh milk, as obtained commercially, is superior to boiled milk. It is a widely-spread delusion that boiled or sterilized milk is not a good food for infants. It is objected that it is less digestible, less nutritious, less antiscorbutic, and finally, that it is an "unnatural" food. The true position is as follows: If we had a milk supply above suspicion, and could get pure, clean milk, free in particular from tubercle bacilli, distributed to the consumer in such a way that there was neither a likelihood of its becoming sour nor a risk of its having been contaminated, boiling, sterilizing, or cooking in any way would be unnecessary. At present we are far from this ideal, and the raw milk of commerce is a dangerous food. Cooking does not render milk less digestible, but the reverse; it diminishes its nutritive value very slightly, or, if the milk has been heated in a

closed vessel so that no scum forms, not at all. Boiling does not make the milk of the cow a more "unnatural" food than before. There remains, then, only the question of scurvy. Unquestionably, boiled milk can cause scurvy, but it seldom does so, and the risk is easily guarded against. It is an incomparably less serious risk to run than that of infecting an infant with tubercle bacilli from raw milk.

(3) That "one cow's milk" is a desirable food. Owing to variations in the composition of the milk of the cow, it is best to use the mixed milk of a herd, which will maintain a more uniform composition.

(4) That the more milk a child takes, the better. Over-feeding is more common than under-feeding. On an average a baby requires about one-seventh of its body weight of milk daily. Some children thrive on one-tenth; others require one-fifth; more should not be given.

(5) That large quantities of cream are beneficial. A mixture for a baby should not contain more than three to three and a half per cent of fat. If it contains more, fat indigestion is likely to ensue.

(6) That failure to thrive shows that the child needs more food. This may be the reason, but it is much more likely that the food is otherwise unsuitable. Too much may be being given; or fat, or (especially in older children) carbohydrate may be deficient.

(7) That vomiting during the first few weeks of life in a breast-fed baby is due to the mother's milk disagreeing. It is often a sign of congenital hypertrophy of the pylorus, and this should be excluded before weaning the infant.

(8) That a child suffering from acute diarrhœa will starve if milk be stopped and water or albumin water substituted. The first thing to do in a case of acute diarrhœa is to stop milk completely, in every shape and form.

(9) A list of common faults: (1) Too frequent feeding. During the second month the interval should be at least two and a half hours, and from the third month three hours. (2) Imperfect cleansing of bottles and teats. Use the simplest pattern of bottles, and never allow milk to dry in them. If the bottle is not to be thoroughly washed after a meal, rinse it out and allow it to stand full of water until it is time to cleanse it. Teats should be rinsed after and boiled before use. (3) Allowing milk which has been boiled to cool slowly. It should be chilled under a tap as quickly as possible, and preserved, covered, in

a cool place. (4) Allowing an unfinished feed to stand over for future use. (5) Frequent changes of diet. If the food has been intelligently chosen it should not be altered without good reason until it has had a week's fair trial. Constant changes lead to nothing but confusion. (6) To bulky feeds. The average rule is an ounce for every month, up to the eighth. (7) Giving starches too early. Nothing but milk is required until the seventh month. (8) Under-feeding towards the end of the first year. This is nearly as common as over-feeding in the early months. By the ninth month a healthy child begins to use his muscles a great deal, and requires starches—the energy producers of the food—in fair quantity. Cereals should be added to the milk about the seventh month; by the ninth or tenth the infant should be encouraged to chew bread and butter, or crust, and ought to have a saucer of porridge, or its equivalent, once or twice a day. Towards the end of the year eggs should be given. It is a mistake to restrict a child of ten or eleven months to milk and thin gruel.

INFANT FEEDING

With the advance of civilization and with the ever growing tendency of people to flock into towns and cities, the problem of infant feeding has become more and more difficult to successfully solve. Unfortunately, too, there is an increasing disposition on the part of mothers of all classes to feed their children artificially: for long this has been the custom with the rich mothers of the whole conutry. Now the well to do and it may, perhaps, almost be said American born mothers of every walk of life are abandoning the natural practice of nourishing their babies at the breast, while a goodly proportion of the foreign born population are following in their footsteps.

At the meeting of the Pediatric Section of the New York Academy of Medicine, held on May 11 last and reported in another part of this issue, the question of the milk supply was discussed from various standpoints and much valuable information was given on the subject.

The subject of infant feeding was dealt with in all its phases by the speakers and it was somewhat curious to remark the lack of unanimity of opinions as to the best point of artificial feeding for infants and to note that little advance, in this direction, appears to have been made within recent years.

The modes in which cow's milk is modified seems to swing backwards and forwards. At one time, the German methods of feeding infants are ignored or even condemned, at another time these methods are extolled. Sometimes an authority will state that there is too much fat in a certain modification of milk, while another will say that there is not enough, opinions as to the amount of sugar in a modified milk for infant consumption differ, and so on and so on.

All physicians, however, experienced in the feeding of babies are of one mind, that raw milk is not a suitable food. In the first place, it must always be borne in mind that a point which in particular differentiates mother's milk from cow's milk over and above the question of its digestibility is, that mother's milk is practically a sterile fluid when it leaves the breast, but the same cannot be said of cow's milk. Cow's milk not only contains organisms which cause milk to become sour, but not infrequently the germs of disease. The reason that for infants it is of especial importance that the milk should be pure, is because the low degree of activity which is characteristic of an infant's stomach enables these germs to pass on almost unaffected into the intestines, where they may readily become the seeds of disease. Therefore, if cow's milk is to be employed to feed an infant, the first and essential step is to procure as pure a milk as possible. But as an uncontaminated milk cannot be obtained in a city except at a high cost, it has been found necessary to use means to destroy the hurtful germs that may be present. Pasteurization has been generally adopted because this method is said to injure the nutritive properties of milk but little, if at all. Into the merits of the very numerous methods of modifying milk, it would be impossible to enter within the limits of an editorial article, suffice it to say, that very frequently the personal equation balks largely in selecting a suitable form of modification. Some infants are more tolerant of fat than others and some assimilate sugar with greater ease.

This statement may be made with emphasis, that an infant requires a certain amount of fat and is likely to suffer more seriously from a deficiency than from a superfluity. It is better for the baby to suffer from some degree of intestinal disturbance than to become rickety. In the successful rearing of an infant, much depends on the personal equation, that is to say the selection must be made as to a milk most easily assimilated and perhaps as much depends on the manner of feeding. As said before, it is impossible to lay down hard and fast rules with regard to modifying milk, but it is not impossible to regulate the quantity of food and the time of feeding. These points should be strictly attended to both in the case of breast fed and artificially fed infants. With respect to artificial foods other than cow's milk, many of them are valuable adjuvants to the successful feeding of infants and children. Condensed milk is very largely used as an infant's food in the big cities of this country and no doubt, is used to a considerable extent in Great Britain: except as a change perhaps, in some instances, the emplyment of condensed milk is condemned by physicians. Babies fed on it may look fleshy, but they are pale and flabby and frequently suffer from rickets. Proprietary foods, as a rule, should be prescribed with due care for the particular case. Many contain unaltered starch, many are poor in fat and there is often a deficiency of proteids in them.

In the course of the remarks made by Dr. Emmett Holt at the meeting referred to above, he drew attention to the seeming anomaly that in London with a notoriously unsatisfactory milk supply, the rate of infant mortality was less than in Boston and Chicago, both of which cities have a fairly good milk supply. No doubt the weather is a factor in the larger infantile death rate in the American cities but there are other factors to be considered. Within the past few years in every poor district of London, schools for poor mothers have sprung up, modelled after those of France and Belgium, in which parturient mothers are fed and after being confined are cared for and fed for two or three months after the birth of the child. The chief feature of these schools is that the mother is urged to feed her child at the breast and is generally instructed in the best methods of rearing a child. The crusade in Great Britian against infant mortality is aimed at artificial feeding and not so much in encouragement of pasteurization. The merits and need of pasteurization are allowed, but it is argued that the most important procedure, by far, is to induce all mothers, who are able, to suckle their own children.

No matter how skilfully milk may be modified, no matter how near in its constituency it may be brought to resemble human milk, there is a suitable difference which no modification has been able to overcome. This difference probably depends upon some qualitative difference in the composition of the two kinds. The practice followed in European cities of feeding poor mothers and infants and of instructing the mothers how best to rear their children has been attended with satisfactory results, and is worthy of a trial in the larger American cities.

DRIED MILK AS A FOOD FOR INFANTS

Dried milk is the residue left after the natural moisture in milk, has been evaporated. One process is that of Drs. Just and Hatmaker. Fresh milk is fed in a continuous stream to revolving heated cylinders, on which it forms a thin film. These cylinders are heated by steam at about 40 lbs. pressure; the surface attains a temperature of about 250° F.; and the moisture in the film of milk is almost instantly dispelled. The dried film is automatically detached from the cylinders by knife edges, and falls off into receptacles below. The small amount of moisture not evaporated is taken up by the milk sugar as water of crystallization. The dried milk is subsequently passed through a sieve to ensure uniform pulverization, and is obtained as a coarse, granular craem-colored powder, practically sterile, which, in air-tight packages, will keep almost indefinitely, at least a year.

When again mixed with the equivalent quantity of water about 60 per cent. is found to be soluble, the remainder being readily suspended. The resultant fluid is slightly different in consistency from fresh milk; the flavor is altered, though by no means unpleasantly; the fat tends to separate and to rise to the surface, owing to the globules having been ruptured. It is somewhat uncertain to what extent the chemical composition is affected in this process. The relative proportions of the main groups of constituents (proteids, fat, milk sugar, and salts) remain practically unchanged, but there is no doubt some interference with the exact composition of the more complex albuminoids and enzymes, similar to what occurs when fresh milk is boiled. However, by reason of the very short time (a matter of seconds) during which the heat is applied, it is possible that the alternation in chemical composition is less than in the ordinary process of boiling milk. The heating process destroys all pathogenic bacteria; and there is no possibility of insect transmission.

The factor of the purity of this product is important considering the unreliability of much of the milk that is vended.

C. K. Millard (British Med. Jour., Jan. 29, 1910.) found that dried milk has for infants greater digestibility than fresh milk; many infants who previously had been continually subject to vomiting after each feeding, and in consequence were making little or no progress would retain dried milk and at once begin to thrive. It is held that the curd of dried milk formed in the stomach does not tend to run into hard cheesy masses, as is the case with ordinary cow's milk. Infants seem to prefer dried milk. In an experience of some ten months with hundreds of infants, Millard found no scurvy, rickets, or other bad effects; and some fifteen of his colleagues have reported like results.

WHY WOMEN SHOULD SUCKLE THEIR OFFSPRING

The reasons why children should be suckled at their mother's breasts are larger than some may be inclined to believe. In the first place the psychological reason is one of no mean importance. The breast with its exquisitely sensitive nipple, vibrating in harmony with the sexual organs, furnish the normal mechanism by which maternal love is developed. No doubt the woman who never suckles her child may love it, but such love is liable to remain defective on the fundamental and instinctive side. . In some women, indeed, whom, we may hesitate to call abnormal, maternal love fails to awaken at all until brought into action by the act of suckling.

It is involved in the proper fulfilment of a mother's relationship to her infant that, provided she is healthy, she should suckle it. Of recent years this question has become a matter of serious gravity. In the middle of the eighteenth century, when the upper class women of France had grown disinclined to suckle their own children, Rousseau raised so loud and eloquent a protest that it became once more the fashion for a woman to fulfill her natural duties. At the present time, when the same evil is found once more, and in a far more serious form, for now it is not the small upper class but the great lower class that is concerned, the eloquence of a Rousseau would be powerless, for it is not fashion so much as convenience, and especially an intractable economic factor, that is chiefly concerned. Not the least urgent reason for putting women, and especially mothers upon a sounder economic basis is the necessity of enabling them to suckle their children.

No woman, is sound, healthy and complete unless she possesses breasts that are beautiful enough to hold the promise of being functional when the time for their exercise arrives, and nipples that can give suck. The gravity of this question today is shown by the frequency with which women are lacking in this essential element of womanhood, and the young man of today, it has been said, often in taking a wife, "actually marries but the mother is not deprived of that discipline of such care and she is also enabled, from the outset to learn and understand her child's nature.

department of University College Hospitals that thirty-nine had never suckled at all, seven hundred and forty-seven had suckled all their children, and two hundred and fourteen had suckled only some. The chief reason given for not suckling were absence or insufficiency of milk; other reasons being inability or disinclination to suckle, and refusal of the child to take the breast (Backer, Medical Chronicle, Feb. 1900). These results among the London poor are certainly very much better than could be found in many manufacturing towns where women work after marriage. In the other large countries of Europe equally unsatisfactory results are found. In Paris, Madame Dluska has shown that of 209 women who came for their confinement to the Clinique Baudelocque, only 74 suckled their children; of the 135 who did not suckle, 34 were prevented by pathological causes or absence of milk, 100 by the necessities of their work. Even those who suckled could seldom continue more than seven months on account of the physiological strain of work. (Dluska, Contribution a l'Etude de l'Allaitement Maternal, de Paris, 1894). Many statistics have been gathered in the German countries. Thus Wiedow (Centralblatt fur Gynakologie, No. 29, 1895), found that of 525 women at the Freiburg Maternity only half could suckle thoroughly during the first two weeks; imperfect nipples were noted in 49 cases, and it was found that the development of the nipples bore a direct relation to the value of the breast as a secretory organ. At Munich Escherich and Buller found that nearly 50 per cent. of women of the lower class were unable to suckle their children, and at Stuttgart three-quarters of the child-bearing women were in this condition. The most important reason why the mother should suckle her baby, provided she is reasonably healthy, is that her milk is the infant's only ideal food. Really the only way to modify cow's milk is for the mother to drink it first and thus elaborate in her body Nature's infant food. All other foods are more or less possible substitutes, which require trouble to prepare properly and are, moreover exposed to various risks, from which the mother's milk is free. An additional reason why the mother should nurse her child is the close and frequent association with the child thus involved, not only is the child better cared for in all respects but the mother is not deprived of that disclipine of such care and she is also enabled, from the outset to learn and understand her child's nature.

PEDIATRICS

ORIGINAL ARTICLES

MILK IN THE POOR HOME*

BY DR. G. R. PISEK
New York City

The present paper will deal with the milk problem particularly as it relates to large centers of population drawing their milk supply from sources distant many miles (in some cases 450 miles and eighteen hours), necessitating that from twenty-four to thirty-six hours elapse between milking and delivery to the consumer.

In carrying out the policy of bettering the milk supply, the New York Milk Committee became a demonstrating as well as an investigating body. Five cardinal lines of activity stand out in the Committee's campaign for pure milk and its closely related object, the reduction of infant mortality:—

First, education of mothers in the care and feeding of their babies demonstrated to be practical through infant centres known as milk stations.

Second, clean milk at a low cost to the poor—a necessity—made possible by the Committee's experiment in clean milk production along lines laid down by Dr. Charles E. North, Chairman of the Committee's Sub-committee on public health and sanitation. The type of milk thus produced is now used by the municipal milk stations.

Third, the elaboration of a set of milk standards as to cleanliness and safety, these being essential for the guidance of producers, dealers, consumers, and officials.

Fourth, effective organic co-operation of all public and private infant welfare agencies with the milk station work, thus making the milk station a centre of infant welfare activity and promoting efficiency in giving the best results without waste of effort.

Fifth, a campaign of pre-natal supervision conducted in connection with the milk stations in which the effort is directed to reduce the waste of infant lives by preventing stillbirths and reducing the mortality during the first month of life by preventing premature births, securing stronger and healthier babies and making maternal nursing possible.

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*Read before Nat'l Conference Infant Mortality, London, 1913.

In 1908 we were serving modified milk to poor mothers who could not nurse their babies. In an endeavor to ascertain which form of milk was best adapted to the purpose, four stations used raw milk and three used the same milk pasteurized. The results justified the belief that when the milk supply is carefully guarded, raw milk is best, but in supplying a large city with milk, the difficulty of so guarding the milk is so great at the present time, that it has been decided that pasteurizing is advisable till the general quality of the milk has been raised to a better average standard.

It must not be forgotten that these mothers were not only receiving ice for the preservation of the milk, but careful instruction in the care of the baby milk supply. We meanwhile found that the cost of modifying milk in individual packages was becoming prohibitive (a quart of milk costing the committee, including all administration charges, 28 cents when placed in the hands of the mother). We accepted the lesson and determined to sell at cost to the mothers a quart or pint bottle of milk and teach them how to modify it in their own homes. For a whole year milk was thus dispensed, the mother being taught by the station nurse, first, at the station, as to the general principles of modification (class-room work and demonstration); second, by demonstration in her own home; third, by supervision in her own home when it was believed she was sufficiently capable to do the modifying herself. Only in rare instances did it develop that a mother was so ignorant or careless that it was necessary constantly to modify the milk for her baby at the station. This method I want particularly to bring to your notice as best fulfiling the fundamental principle involving all work tending to the reduction of infant mortality—namely, instruction. I can conceive of localities and circumstances in which it would be better previously to modify the milk for each individual. This method may still be the better for milk dispensaries in connection with babies' hospitals to which will be gathered babies convalescent from alimentary disturbances, but for the general prophylactic work of milk depots we must strongly urge the adoption of the home modification method. That this opinion is gaining ground in America is indicated by the fact that a majority of the cities have changed to this method. Over 80 per cent. of the work in New York City is now done in this way.

In the order of the efficiency in the reduction of infant mortality, milk stations may be grouped into three classes:—

First, those giving instruction in the principles and methods of home modification, including the care of milk by the consumer.

Second, those dispensing modified milk plus instruction in hygiene, &c.

Third, those supplying modified milk without instruction.

That this first method is effective in saving baby lives may be demonstrated by the results of our campaign in New York City in 1911. In station districts that year the death-rate among the babies enrolled at the station was only half that in districts at large. The general rate in one tenement district was reduced from 148.5 in 1910, when there was no station, to 99.1 in 1911 under station supervision.

This campaign conducted by the milk committee was so

STATISTICS FOR STATION AREAS, DEDUCTING STATION ENROLMENT FROM DISTRICT BIRTHS AND STATION DEATHS FROM DISTRICT DEATHS, COMPARED WITH STATION FIGURES.

	STATION DISTRICTS			STATIONS		
	Death	Birth	Rate	Deaths	Enrolment	Rate
1. E.	42	987	42.5	12	256	46.8
2. E.	11	457	24.0	0	123	0.0
3. E.	32	1.067	29.9	2	207	9.6
4. E. and 21 E...	46	1.347	34.1	6	430	13.9
5. E.	30	857	35.0	0	155	0.0
6. E.	39	1,046	27.2	1	153	6.5
7. E.	22	678	32.4	7	142	49.3
8. E.	33	753	43.8	3	158	18.9
9. E.	29	374	77.5	5	187	26.7
10. E.	44	581	75.7	6	205	29.2
11. E.	69	1,364	50.5	14	299	46.8
12. E.	65	1.273	51.0	5	283	17.6
13. E.	13	255	50.9	1	111	9.0
14. E.	27	377	71.6	4	176	22.7
15. E.	30	435	68.9	9	170	52.9
16. E.	18	336	53.5	5	135	37.0
17. E.	15	262	57.2	6	135	44.4
18. E.	34	516	65.8	6	267	22.4
19. E.	76	1,433	53.0	8	198	40.4
20. E	8	204	39.2	2	134	14.9
22. E.	12	265	45.2	2	101	19.8
23. E	25	587	42.5	0	189	0.0
Total east side ...	720	15,454	46.5	104	4.214	24.6

1. W.	43	625	68.8	4	236	16.9
2. W.	22	426	51.6	10	129	77.5
3. W.	38	407	93.3	8	117	68.3
4. W.	94	1,211	77.6	7	198	35.3
5. W.	23	287	80.1	2	91	21.9
6. W.	19.	121	157.0	5	121	41.3
7. W.	42	342	122.8	2	139	14.3
8. W.	16	231	69.2	3	134	22.3
Total West Side	297	3,650	81.3	41	1,165	35.1
SUMMARY						
East side	720	15,454	46.5	104	4,214	24.6
West side	297	3,650	81.3	41	1,165	35.1
Total	1,017	19,104	53.2	145	5,379	26.9

successful that the City of New York was induced to appropriate sufficient money to carry on the work under the division of child hygiene. That it is being most creditably carried on I am pleased to testify.

In order to make the milk station a success among the very poor of the tenement districts, it was necessary to secure milk of first quality at a price within the reach of these people which at the same time would not tend to pauperize them by making them the recipients of partial charity. It was further desirable that some method be found whereby these mothers, educated to buy first quality milk for their babies at the milk stations, should be able to procure an equally safe milk from the commercial companies at the same price, in order that they may not be at the mercy of dealers in poor quality milk when they have not easy access to a milk station. Believing it possible to produce first grade milk at a moderate price, Dr. North induced a couple of philanthropic capitalists to purchase a dairy at Homer, New York, near Syracuse. This was fitted out as a central plant where milk could be scientifically pasteurized and bottled, and the utensils used by the farmers sterilized. A group of farmers with ordinary farm equipment were induced by premiums to sell their milk to this creamery and adopt the methods prescribed by the company; instead of compelling the farmer to build an expensive plant such as is ordinarily used for producing certified milk, he was simply asked to keep his stables and cows and milkers reasonably clean and use a special milk-pail provided with a small opening at the side of the top, the top being covered so that no dust would fall in the milk. When the milking was done the pail was capped and sent direct to the creamery, where it was emptied, then cleaned and thoroughly sterilized at the central plant. After this it was sealed with the cap and sent back to the farm, not to be opened until the next milking time. By this process, with no additional expense to the farmer, it was possible to produce milk equal to the 15 cent and 20 cent certified milk at 8 and 9 cents per quart. This company now has a contract for providing the municipal milk stations.

Another question that arises in this connection is what type of milk to advise for use in the poor home—the milk which will be produced preferably for drinking purposes for the mother and the children? It should be that milk which is cheapest and shall have the qualities of a life-giving and not a life-destroying fluid. It should come from healthy tuberculin tested cattle, and contain not more than 100,000 bacteria with a fat content not less than 3.5 per cent. If this milk is then pasteurized according to modern methods at the receiving plant located near the dairies, it will have qualifications that make it eminently suitable for use in the poor home, i.e., it will be less liable to atmospheric changes; to deterioration from carelessness or neglect on the part of the consumer; it will contain no virulent organism that can produce disease in children of this kind who are so likely to have a lowered body resistance, and epidemics of streptococcus sore throat will be impossible. If we decide to use or advise such a supply, we shall have an important duty to perform, namely, popular instruction relating to milk in the home and its economic value; comparison of milk with other household foods; the refrigeration of the milk, especially in cases where the cost of ice is almost prohibitive.

The mother must be taught how to preserve the milk during the hot summer days by constructing cheap home-made ice-chests. She must know that milk is very susceptible to contamination, absorbs odor readily if not rightly preserved.

In order to determine what the standards of pure milk should be the National Commission on Milk Standards was appointed by the New York Milk Committee in March, 1911, as a result of a milk conference held under the auspices of the committee in December, 1910. This commission consisted of seventeen experts from all over the country. After a year of careful work it recommended grading milk into four classes:

Grade "A"—Certified milk or its equivalent.
Grade "B"—Inspected milk.
Grade "C"—Pasteurized milk.
Grade "D"—Milk not suitable for drinking purposes.

It recommended that milk suitable for infant use should not contain more than 100,000 bacteria per cubic centimetre when used raw, or if pasteurized not more than 10,000 bacteria per cubic centimetre when ready for consumption. It condemned the use of "loose" or "dipped" milk except under carefully guarded conditions. As the result of these findings the New York City board of health adopted these grades with slight modifications and passed an ordinance forbidding the sale of the lowest grade in any eating place in the city. It is now considering an ordinance forbidding the sale of "loose" or "dipped" milk in any but certain dairy stores properly certified by the department.

The deaths under one year in New York City have dropped in two years 125.6 to 105.3 per 1,000. That this is the result of a city-wide campaign directed principally against summer diarrhœa cannot be gainsaid. If we are to make a further reduction other lines of work must be mapped out, such as pre-natal instruction in an effort to reduce the number of deaths from so-called congenital debility. If we are to reduce the mortality and morbidity, then no detail which pertains to the care of milk in the home must be neglected. Such efforts can be best derived from milk stations, infant welfare centres, public lectures, and last but not least, newspaper publicity.

THE ADMINISTRATIVE CONTROL OF THE MILK SUPPLY*

BY WILLIAM G. SAVAGE, M.D.
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It will, I think, be accepted that the milk supply requires special control. Milk is a fluid which is an admirable nutritrive material for bacteria, so that much of the bacteria contamination it receives is multiplied many fold; it is a fluid which is obtained under sources and conditions which render bacterial contamination easy, and it is obtained from animals which may themselves be diseased and transmit by way of the milk their disease-producing organisms. Lastly the arrangements of urban life in this country necessitate that this germ-sustaining fluid shall be transmitted through many hands and be usually some time in its passage from cow to consumer.

Special control of the milk supply is, therefore, urgently required, and the need has been admitted by the considerable enactments which are concerned with its collection, transmission, and sale.

*Read before Nat'l Conference Infant Mortality, London, 1913.

Speaking generally, we have to recognize four separate ways in which milk may be responsible for human disease and ill-health:

(1) Chemical impoverization.

(2) As a vehicle for the spread of tuberculosis.

(3) As a vehicle for the transmission of the acute infectious diseases.

(4) As a vehicle for general bacterial contamination.

As regards (1) this is essentially a question for control at the consumers' end, and I do not propose to discuss it here, apart from saying that the present powers are largely adequate if only they were properly enforced. Tuberculosis is dealt with by Professor Beattie. The following remarks, therefore, refer chiefly to control from the point of view of acute infectious diseases spread by milk and with general cleanliness and the production of clean milk.

MILK AND THE ACUTE INFECTIOUS DISEASES

As regards acute infectious disease the actual infection of the milk may occur at any stage in the passage of the milk from the cow to the consumer, but a study of the records of individual outbreaks shows that in the great majority of them the infection has taken place at the source of the milk. While, therefore, precautions are necessary throughout, they are especially required at the source of production.

The existing legal powers for controlling these outbreaks are most unsatisfactory. When, as is usual, the outbreak and the seat of infection are in different sanitary areas the delays and restrictions imposed by the red tape requirements of the legal section are so vexatious that most of the harm is done before the legal machinery can be put in effective motion. Most of these restrictions will be removed if the present Milk Bill becomes law. Even if these sections are made law, they will not go far to prevent outbreaks of infectious disease spread from milk. They are essentially directed to the investigation of outbreaks which have already occurred, and attempting to stop their further spread; they do not prevent outbreaks, only aim at limiting them after they have started.

I am of opinion that to prevent these outbreaks it is necessary to recognize that special precautions are required on the part of those who handle milk. It should be compulsory (with penalty of loss of license to produce or handle milk on default) for every dairyman to notify all cases of illness in himself or his family, or his employees and their families, to the local sanitary authority. All forms and postage for this should be paid for by that authority. Certificates that no illness has occurred to the dairyman's knowledge should be part of the weekly information supplied by each dairyman to the person to whom he supplies his milk; the latter to provide the special forms required. If on account of illness on the farm, as ascertained by such notification, the milk supply is stopped by the local sanitary authority, the latter should compensate the farmer. In doubtful cases temporary pasteurization might be resorted to.

The detection and limitation of outbreaks of infectious diseases spread by milk would be facilitated if the whole control of the milk supply were under the County Councils with a proper staff to carry out the work.

GENERAL BACTERIAL CONTAMINATION AND THE PROVISION OF CLEAN MILK

As we are all aware, milk contamination may occur at every stage, but we need to look at the matter broadly. All sorts of well-meaning people come forward with solutions of the milk problem in the shape of improved milk distributors, special milk bottles, and the like. Contamination in delivery must of course be considered and prevented, but after all it is a comparatively trivial source of contamination, and taking place as it does under the eye of the consumer is not likely to be very extensive.

The problem of clean milk in its essentials can be put in a phase; it is to collect cleanly and transmit cool. Do this and the rest, although necessary, is quite secondary.

To get clean milk we must have adequate administrative control over the production of milk. Everyone acquainted with the subject knows that this is just where administration fails, and I think it is hardly too strong to say that, speaking generally, there is at the present time practically no efficient administrative control over the production of milk in the greater part of the country.

Of course the dairies, cowsheds and milkshops orders, and the regulations made under them, will be advanced as showing the extensive nature of the control exercised over the production of milk, but, apart from urban areas, it is usually all paper control, and even in urban areas they are frequently more honored in the breach than in the observance. In many rural districts the register is not even complete and there are many cowsheds which have never been inspected.

In many places no regulations have been made under the orders. It will be remembered that the purpose for which regulations may be made are: (a) For the inspection of cattle in dairies; (b) for prescribing and regulating the lighting, ventilation, cleaning, drainage, and water supply of dairies and cowsheds; (c) for securing the cleanliness of milk stores, milkshops and of milk vessels used for containing milk for sale: (d) for prescribing precautions to be taken by purveyors of milk and persons selling milk by retail against infection or contamination.

Without regulations these matters will certainly not be officially attended to. Further, when regulations are made they not infrequently contain no powers dealing with cleanliness during milking and the cleansing of cows' udders and teats. The point, however, which is not sufficiently realized is, that when these regulations are made they are, in practically all rural districts, a dead letter as regards cleanliness precaution in milking, and usually also as regards structural requirements.

The great majority of the members of Rural District Councils are either farmers who are cow-keepers, or persons financially intimately associated with farmers. The officers who have to see the regulations are carried out are without security of tenure, and their salaries are paid by the Rural District Councils, from whom they have to take their instructions as to enforcing these orders and regulations. The expenses of working them fall locally, both administratively and as concerns individuals; the profit in the shape of clean milk is for some urban population, perhaps far away, who contribute nothing to the expense and who pay no higher price for the clean milk. It is hardly necessary to go further in explanation of the failure of these regulations.

That many cowkeepers take steps, and sometimes efficient steps, to collect their milk pure and transmit it properly, is a fact we are all glad to recognize, but they do so either on their own initiative or because of the regulations of the Milk Company to which they send their milk, and very rarely because of official pressure and supervision.

Control must be removed from the Rural District Councils, who have neglected their duties and have notably failed to insist that even the most reasonable structural conditions and precautions in milking are adopted.

If they are not to control milk production two sets of authorities only remain—County Councils and the Urban Authorities. In my book, "Milk and the Public Health," I have suggested that a special form of urban control is the most desirable.

Urban authorities should be given power to prohibit, after reasonable notice and warning, the milk of all cow-keepers who neglect necessary precautions and whose milk is therefore heavily bacterially contaminated, from being sold in their districts. With the precautions and conditions which I have elsewhere described, I think that this is the procedure which will be most efficacious. This plan does not, however seem to be within the range of practical politics at the present time and I do not propose to discuss it further. Also during the last few years, County Councils have advanced considerably along the road of sanitary administration, and there is now much to be said in favor of the control of the milk supply being entrusted to them. County Councils in the future are likely to be much more executive as regards public health matters and will develop a staff which will be in part available for this work.

The present milk bill goes some way in this direction, but in a very tentative and hesitating manner, and not far enough. The transference of the present duties and powers, and even with added duties and powers, to County Councils will not alone provide a satisfactory solution and many other considerations must be borne in mind. Of these the following may be mentioned:—

(1) The urban population should contribute towards the increased expense incurred by rural authority to provide pure clean milk. The benefits are mainly for the towns, and it is unfair if they do not contribute. This may be done:

(a) By an increase in the price of milk to consumers. This is not an equitable way, since the heavy cost to County Councils of a proper scheme of supervision will have to be paid by many other classes besides farmers, the only ones who will benefit by the enhanced prices. No doubt the cost of milk will be slightly increased, but is should only increase to cover the cost of production.

(b) By grants in aid to County Councils from the Treasury. Since these are contributed by the whole population, urban and rural, this is a reasonable method of distributing the burden. Such grants would further ensure that the work was adequately carried out, since they would only be paid if a satisfactory scheme was in force and maintained. They should be at least 75 per cent. of the total cost.

(2) The Consumer must be educated up to the appreciation of clean milk. The consumer as an individual is usually totally ignorant of the bacterial content of his milk and is com-

pletely apathetic on the subject. To him good milk means rich in cream, and he knows no other standard by which to judge it, and all his wrath is reserved for the milk vendor who defrauds him of his cream. Naturally clean, safe milk obtains no higher price and is not more in demand than dirty or tuberculous milk. There are of course numerous enlightened consumers, but they are, from the monetary point of view, a negligible quantity.

(3) The Cow-keeper must be educated up to the necessity of providing clean milk. Nothing is more striking in the whole of the milk problem than the fact that cow-keepers, as a class, are quite unaware how grossly faulty are their methods of milk collection and transmission. Speaking from an extensive experience. I have found that the average farmer, while he admits that perhaps a little more attention is necessary, yet thinks that very little is wrong, and he frequently is genuinely indignant when he is told that his methods of procedure and the sanitary conditions of his cowshed are highly unsatisfactory.

To mention one example. He does not in the least see why stacking his manure just behind the cow-sheds, an arrangement which he has seen practised all his life and which is so eminently convenient for farm purposes, should be considered bad. He has for so long regarded his milk business as part of, and to be worked with and on the level of his other farm operations, that any special consideration for it which conflicts with the proper development of other farm operations strikes him as not only unreasonable but preposterous. That manure should be left for days unremoved from the cow-sheds and from the cows he admits is not quite as it should be, but if he can advance the fact that the men were busy at harvest or elsewhere, it seems to him a quite sufficient explanation. Put briefly, the average farmer does not in the least recognize the special obligations of milk collection and transmission, and we shall never get clean milk until this need for special persistent care is brought home to him. Naturally so long as dirty milk commands the price of clean milk, he will not be a very teachable person.

The Transmission of Milk Cool. The essential point in the satisfactory transmission of milk is to initially cool it properly. I have published elsewhere a number of experiments which demonstrate how very slowly milk cools in bulk, and what a long time is taken by milk properly cooled to increase to a temperature favoring bacterial multiplication.

At the present time in my experience only a small proportion of farmers themselves cool their milk before transmission.

On the other hand, a considerable and an increasing part of the milk transmitted by rail to the big towns is sent first to milk depots adjacent to stations and there, as a rule, it is cooled before transmission, at least in the summer.

In addition to initial cooling, there is the question of keeping cold in transit. The need for rapid transit is fairly well met, but there is need for more special transit. Special well-ventilated trucks are required. If milk is properly cooled I do not think that refrigerator vans are necessary. Of course proper types of churn, &c., are required.

It will be convienent to put together the chief points and principles mentioned above as necessary for effective administrative control of the milk supply:—

(1) Apart from chemical sophistication the essential sources of milk contamination are at the farm, and it is there that the main control must be exercised.

(2) Administrative control must be removed from the hands of the rural and small sanitary authorities, who are largely financially influenced in or by the milk trade.

(3) The urban population should contribute towards the expense of administration, since the benefits are mainly for the large towns.

(4) The cow-keeper must be educated up to the special obligation of milk production, both as regards special care and cleanliness and the liability of milk to transmit infectious disease.

(5) The consumer must be educated up to the appreciation of the value and importance of clean, pure milk.

(6) If the increased care in collection and transmission sends up the price of milk, this is not a good reason why these necessary steps should not be taken.

(7) The cost of production must be lowered by co-operation, while co-operation must be utilized to transmit milk in a proper condition.

THE CONTROL OF THE MILK SUPPLY FROM THE POINT OF VIEW OF THE VETERINARY INSPECTOR*

BY J. W. BRITTLEBANK, M. R. C. V. S.
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The whole problem of the improvement of the conditions under which milk is produced bristles with difficulties, inasmuch as attempts at interference in the direction of improvement are met with opposition at every point; and further, it must be remembered that any concerted and organized scheme of action which is pushed too rapidly will have as its immediate result the forcing up of the price.

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*Read before Nat'l Conference I fant Mortality, London, 1913

It is not my particular business to come here to offend dairy-farmers, but I have had a good many years' experience, first of all as a veterinary practitioner in a country district, and for the last twelve years as a veterinary officer whose duty it has been to inspect dairy farms whence milk was sold in the city of Manchester; and as the result of the accumulated experiences obtained, I have come to the conclusion that to a very large extent we approach our subject from the wrong standpoint. I plead rather for a policy which shall have for its basis the statement of fact and the abolition of sweeping statements.

It is perfectly true to say that many of the conditions under which the production of milk is carried on are objectionable, that on very many farms the dirty conditions are appalling, and that there is little doubt that no inconsidererable proportion of the cattle producing milk are diseased.

Let us take first of all the dirty conditions. It would be scarcely possible to find a farm which is not carried on under conditions which are scientifically dirty, and on a very great number so badly are they constructed that it would be almost impossible to attain conditions even of "practical" cleanliness. This appears to me to be the crux of the whole question.

In the first place a large percentage of the individuals engaged actually in cow-keeping have not the slightest conception of what scientific cleanliness means. As an individual the farmer has been brought up, as have many generations of his progenitors, to believe that the actual dirt of the farm, which is of course mostly manure, is no unimportant monetary factor, and further that manure, as manure, never did anybody any harm. Are you going to clear his mind of the falsity of his beliefs by merely rushing into the press and saying he is a dirty vagabond, and that being dirty he must of necessity be dishonest and without conscience? I venture to say that you will do nothing of the sort. He will meet his friends in the evening, possibly at the local shrine of Bacchus, and he will promptly designate you as a worthy inmate of the local asylum for the mentally weak. On the other hand, approach him as a reasonable being, with a certain amount of license to existence, demonstrate to him in a practical manner where he is mistaken, point out by analogy and example where he errs, and don't lay too much insistence on the presumption that he is an ignorant fool, and I venture to say that you will leave behind you a nucleus which will in the course of time develop along the line which is so urgently desired.

Addressing myself to the administrative measures which appear essential, it may be at this point necessary to point out that there appear to be two distinct schools, each of which advises different courses of action.

There are first of all those who believe that the proper method to deal with the improvement of the milk supply is to so sufficiently alter the conditions at the source of production as will ensure the output of a supply of milk which will be safe for the consumption of both children and adults.

On the other hand many believe that it is so difficult to effect this improvement, that they would discard serious attention to such measures and would confine their attention to treating the milk itself in such a manner as to render it innocuous no matter what its source. With those who would associate themselves with the latter policy I have no argument, except to suggest that it is clumsy and economically bad, and I am a firm believer in the policy of dealing with the source of production first.

It might be advisable at the outset to attempt to ensure a sufficient supply of pure milk for the use of children, but even this would be extremely difficult to carry out, because, after all, parents are free agents, and a very large number are compelled to buy in the cheapest market. I therefore favor general measures applicable to all concerned.

The question which then arises is concerning legislation on the subject. The powers with which such work can be carried out ot present are (1) the Dairies, Cowsheds, and Milkshops Order, and (2) the Public Health Act.

There has been for some time a considerable demand for a new milk bill, and the proposed bills which I have seen are admirable enough in themselves, but in my humble opinion the existent Dairies, Cowsheds, and Milkshops Order with a little amendment would be a most admirable piece of legislative work. Unfortunately this order is not compulsory, and even where adopted has not been carried out. I believe that if this order were made compulsory and placed in the hands of the large authorities such as the County Councils, to administer, an enormous amount of good would result. It is not to be wondered at that to a very large extent the carrying out of the Dairies, Cowsheds, and Milkshops Order has been a dead letter. Placed in the hands of the small local authorities to administer, it was not to be supposed that the elected representatives would have any violent desire to be particularly harsh on themselves.

In another sense the present situation is grossly unfair: in the large centres of population, most of which have farms situated in their areas, this Order is administered more or less thoroughly; often enough just outside the boundaries no notice at all is taken of it, and yet the farmers of both districts have to compete on an equality for trade, as there is nothing to show that the milk sold by one man is produced under proper conditions, whilst the individual from the uncontrolled area may have a farm which is insanitary and dirty to a degree.

I am convinced that one of the first things to be done in this country to improve the state of the milk supply is to sweep away the awful conditions of housing cattle which exist.

Unfortunately at present the person legally responsible for the insanitary conditions of the farm is the tenant. The full responsibility should be placed upon the landlord.

Often enough I have found when I have tried to get improvements out, that when the tenant has approached his landlord to ask him to do something for him, he has been told if the conditions are not suitable for milk-selling, he will have to stop and start cheese-making or rearing. I know the situation is a difficult one, and far more difficult than appears on the face of it; but there can be no question that the owner of property must be made to fulfil his obligations; at present these obligations are more in a moral sense than a legal one, and the only one which is of real value is the legal one. Many landlords cannot carry out the work required, their estates are so heavily encumbered that it has become impossible to spend money on the tenants; but surely in a work of such immense national importance, both to agriculture and the preservation of the public health, it is not too much to suggest that where such a set of conditions does exist, compulsory powers should be available for insisting on the work being carried out, the State to advance loans at a low rate of interest and repayable over an extended period.

I have seen it stated that this is not really the crux of the problem, but that the dirty conditions existent are of far greater importance. I know what it menas to keep stock, and I have experienced the many difficulties, and I tell you it is impossible to keep these dark, unventilated over crowded places clean. But let in the light of day, provide a plenitude of fresh air, and I venture to say that the stock keepers themselves will soon recognize the value of the improved conditions.

It must not be imagined that I wish to attack landlords. It has been my pleasure to meet many who at great personal sacrifices have carried out very great improvements. The County of Cheshire is one which I visit most, and largely due, I believe, to the administration of the Manchester Milk Clauses, in the first instance, the improvements have been enormous. In many cases the agents have free hand to carry out any improvements suggested, and much excellent work has been done.

Here I wish to raise a question of some considerable importance, and that is, where reconstruction of premises is carried out it has often failed to achieve the object aimed at.

The responsible work of advising what is necessary is too frequently left to a person who knows nothing at all about the work. He may be an expert on drainage and understand the carrying out of many of the requirements of the Public Health Acts, but each man seems to have his own pet idea as to what constitues a good cowshed. Some of the alterations which I have seen carried out are ridiculous, but it is unfair to blame the individuals concerned, they have little or no technical knowledge of the subject. There could be no better illustration of a little knowledge being dangerous, and, a part from this it is unfair to ask people to spend money to no purpose.

In every such case the premises should be visited by a responsible person who shall thoroughly understand the subject. It is surprising, even on the most insanitary and apparently hopeless premises, what a little ingenuity will effect. It is fully time that some standard was laid down, and so prevent much of the waste of money which has gone on.

A full and proper system of skilled inspection should be instituted. I do not mean that men should be employed who would visit the farms wishful to impress upon the farmers the importance of their positions and bursting with the importance of officialism.

Inspection by individuals of this class achieves little: it merely breeds resentment, and often enough distrust. Sympathy, tolerance, and tact are required in addition to a good practical knowledge of their subject. The farmers should be treated as responsible beings, and they should be made to feel that the object aimed at is rather to help them in their work than persecute them. Police methods should never be employed, but the administration need be none the less firm; there need be no pity for the deliberate wrongdoer, and he should be treated with the utmost severity.

Dr. Niven, Medical Officer of Health for the city of Manchester, has for many years recommended the establishment of a Public Health Veterinary Service, and as a member of the veterinary profession I cordially endorse all he says; but I do not wish to enlarge upon the subject. Many side issues seem to be forced to the front to prevent its achievement, but surely on a subject of so much importance professional jealousies need not exist, as there is plenty of room for work for all disciples of medicine.

Legislation is, of course, essential to all public work, but its chief value is educational rather than corrective. In the years I have spent in this special work I have found that if you can gain the confidence of the people with whom you have to deal, they will do a good deal for you, and a great deal can be achieved without much fuss.

As we are situated at present it is only necessary for a milk seller to apply for registration and he must be put on the register without discretion; in place of this I would institute a system of licensing, not necessarily for any limited period, but such license to be a guarantee of the conditions in regard to the essential requirements of a pure milk supply. I would not make the conditions too stringent at first, as it would be disastrous to bring about a condition of things which caused a famine in milk.

I am convinced that the effect of such a system properly carried out would be enormous. The improvement would be so great as to justify all the trouble at the outset. It would be resented, it is true, but most legislative measures are. There should be good security for the holding of a licence and it should not be in the power of any officer to cancel such licence; the holder should have full protection. The licensing authority should be the sanitary committee of the administrative county, whose decision should be final.

It may be contended that the holder of such license should have the right of appeal to a government department, but I think there is little likelihood of any injustice being done, and if any appeal is advisable it should be to quarter sessions.

I am afraid I have only been able to treat the subject very superficially. The subject is an immense one and quite impossible to deal with adequately in the scope of a paper such as this, but the conditions required to improve the milk supply may be summarized as follows: Effective legislation; complete reconstruction of all insanitary cowsheds; though cleanliness of all premises and cattle; cleanliness of all milkers, milk vessels, dairy, &c.; efficient trained inspection.

I have not been able to refer to the very wide subject of communicable diseases. These require special treatment, as the whole subject is a difficult one, but some reference may be permitted to the most important of them, namely, tuberculosis.

The Board of Agriculture have promulgated an order called the Tuberculosis Order 1913. This came into force on May 1st of this year and we have very little material at hand up to the present to enable us to judge of its efficacy. It will not do at this stage to criticize this Order, I do not at any time believe in destructive criticism, and it is admitted in the circular letters issued from the Board that the Order is to a very large extent experimental. I do not believe that the Board of Agriculture expect to achieve very much from this Order, but rather regard it as a preliminary to further and more far-reaching measures for dealing with this scourge.

Those of us who have had much experience of the disease recognize fully that the only satisfactory goal to aim is complete eradication—an apparently superhuman task. We know full well that practically one-third of the dairy stock of this country are tuberculous in some degree; fortunately only a comparatively small proportion of these are dangerous to either their fellows or human beings, but the magnitude of the work which requires the ilinimation from our herds of approximately 1,000,000 cows must be recognized, and it behooves the authorities to proceed with caution. It has nevertheless been demonstrated that bovine tuberculosis can be eliminated from herds, and that such herds can be kept free from tuberculosis, and it has further been shown that this can be carried out on a commercial basis and not merely as a scientific fad. It is to be sincerely hoped that this great work will not be unduly delayed.

If I may transgress for a moment in conclusion I would say that the whole hope for the future lies in the rising generation of agriculturists. Many subjects of a more or less useful character are taught in our rural schools, but I am strongly of opinion that the subject of animal hygiene should be included. The inculcation of knowledge of the principles governing the development and spread of disease is of the highest importance, and if the opportunity is taken of placing this knowledge before the boys during their last year at school I believe it would have an enormous effect within the next few years on the whole subject of agricultural hygiene.

THE USE OF DRIED MILK*

By A. E. NAISH, M.D., M.B. Cantab., M.R.C.P.,
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The essentials of artificial food are (1) That it should be digestible: (2) that it should contain the right proportion of assimilable substances to build up a healthy body; (3) that it should not contain bacteria of such numbers and kinds as to cause disease, and (4) that it should not be too expensive or difficult of distribution. To the mother the first essential seems the most important, to the public health authority the third, while the second perhaps looms most largely on the horizon of the clinician. I need scarcely say that a universally suitable food is as impossible of attainment as the philosopher's stone, yet perhaps too little attention is paid to the idiosyncrasy of the infant. Of breast-fed twins of approximately the same birth-weight you may sometimes find that the one wastes while the other thrives. The presence of two variables (the baby and the food) often clouds our judgment; one baby acts as an advertisement for a food on which the majority of its compeers would develop rickets; another is the graveyard of the reputation not only of several excellent foods, but of that of the medical man in attendance. In arriving at a sane judgment on the merits of a food, full allowance must be made for the variability of the human media.

Before inquiring further into the suitability of various foods for extensive use, it is well to try to estimate the magnitude of the problem of artificial feeding. In consequence of the Notification of Births Act, and the visits that are paid to the homes of the poor by women sanitary inspectors, we are able to estimate more accurately than formerly what proportion of infants are being artificially fed. In Sheffield during the year 1910, it was found that reliable data on this point could be obtained from a total of 6,216 cases. Of these 3.5 per cent. were artificially fed from birth, a further 10.2 per cent. were weaned before the end of the first month of life, and a further 10.9 per cent. before the end of the third month. Making a rough estimate on this basis, it may be reckoned that in the whole city, which contains less than half a million inhabitants, there will be over 470 infants each year who are bottle-fed from birth, over 1,800 before they reach one month old, and over 3,300 before three months. (This estimate is probably a little low, since weaning is least common in the class from which the statistics are drawn).

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*Read before Nat'l Conference Infant Mortality, London, 1913

It is the desire of all of us to increase the proportion of breast-fed infants, but in view of the facts that there is no unwillingness, but rather the contrary among the poorer mothers, and that in Sheffield there is a minimum of industrial employment for married women, it is not likely that for some years at any rate there will be a material improvement over the figures given above; though increasing knowledge of the causes of weaning may effect a gradual change. Any scheme then which aims at improving the nutrition of the infant population by means of altering the artificial food in common use, must be prepared to deal with large numbers. Considerable modifications of cow's milk, such as whey, cream, milk and sugar mixtures are rendered inapplicable on any large scale by reason of the expense of manufacture and distribution.

There is general agreement that, as far as our knowledge goes at present, cow's milk in some form or other should constitute the basis of the feeding of the great majority of infants who cannot be breast-fed, yet it is futile to deny that cow's milk has fallen into some disrepute among the mothers themselves. Not all the wiles of the patent food advertisers would suffice if feeding with cow's milk were such plain sailing as some would have us believe. The maternal mind is often unable to trace nutritional diseases such as rickets, or bacterial infections, to their true source, since the causal relationship is slow or indirect, but an indigestible food has such immediate and obvious results that the mother is a good judge on this point. On the other hand, a medical man, because he has excellent results with some form of food in the preponderating number of infants attending his clinic, cannot on his evidence alone say that this is digestible by the majority of infants. There is abundant reason to believe that although the doctor may not select the cases himself, yet that there is a natural selection going on all the time; the mother who finds her baby crying and vomiting on the first trial of the nutriment, quickly absents herselft and the baby, so that only the successes tend to appear among the regular attendants; this at any rate until the clinic has attained a certain amount of popularity, when some moral hold may be had over the mother even though the baby's symptoms seem to her unpropitious. I fear that cow's milk must stand convicted of having caused indigestion in a considerable proportion of infants fed on it, especially among those weaned very young. The casein has been largely blamed for this, but latterly in some quarters the tendency has been to stigmatize the fat or the added sugar, and to claim that when given undiluted and without sugar, digestive troubles are eliminated. Personal experience apart, it would seem extraordinary that so simple a clue to success as giving the milk without additions should have escaped the observation of generations of mothers, if this method were at all universally applicable.

There is no doubt that in a great number of cases dried milk is strikingly more digestible than ordinary milk, and that this is not due to the absence of cane sugar is proved not only by the history that some of the infants have previously had no excess of this, but by the Leicester experience where they add cane sugar to dried milk, and further by the fact that in certain cases you may bring back the old symptoms of colic and vomiting by adding less than a teaspoonful of raw milk to the dried milk feed. This difference in digestibility is what strikes the mothers at once, and it is an extremely common thing to hear them say after the first week's trial, that the baby has ceased vomiting and ''rested better'' than ever before in its life. If this amelioration of symptoms were purchased at the expense of the child's ultimate good nutrition, a great mistake would be made. It thus behooves the medical man to proceed with great caution until he is sure that it has no tendency to produce rickets or scurvey. Taking rickets first, since it is possible in some cases to cure the disease by a change on to a dried milk diet, it is obvious that in these cases the necessary nutritional elements are capable of absorption and assimilation. This, however, is not proof that in other cases rickets may not develop or even be a fairly common consequence of taking this food, for there is great variability in infantile powers of absorption and assimilation. The point can only be settled by direct observation, and here it is that the observer must be sure that he has a clear mental picture of what is known as rickets. Bony deformities, though striking in appearance, are among the less important signs of the disease, since the earlier and more severe cases show comparatively little outward bony deformity. Unfortunately most of the other signs are not so capable of accurate registration. The time, however, when independent walking is first accomplished can be registered exactly, and I regard this as excellent evidence of the presence or absence of early rickets, since this disease profoundly affects the tone of the muscles and prevents the infant standing or walking till long after the normal time. I have followed up considerable numbers of those fed on dried milk, and noted the time at which independent walking commences; this I have found to be usually within fourteen months, except where the infant has been very far from the normal at the time of its first attendance or has suffered subsequently from measles, whooping cough or other bacterial infection; in not a few cases the child has walked before the end of the first year, and in one case at nine months. I have also followed up as many as possible to the ages of three, four, and five years, and am personally convinced that there is no more risk of rickets with this diet than with a good quality raw cow's milk. Exceptional cases do occur, but they are almost invariably capable of a ready explanation. For instance, mothers occasionally manage to escape through the meshes of our careful oversight, and are found to be giving some of the food to an older child, or for some other reason underfeeding or neglecting the baby. Then twins are particularly liable to pallor, muscular flaccidity and irregular growth of the cranium, which is largely independent of their diet; and this condition is not confined to twins, but may appear in isolated cases or in several members of a family, especially where the mother is liable too hyperemesis and other troubles during pregnancy. Such cases may appear on any diet, even on breast milk of good quantity and quality.

With regard to scurvy, I believe the risk is non-existent. I did see one slight case two or three years ago, which was cured within three days, but the mother in this instance had been attending very regularly, and I was never able to satisfy myself as to what the baby's diet really had been. Besides this I have seen no other, and I am not in the habit of ordering any orange juice or other anti-scorbutic.

Since the finding of so-called "biological substances" in raw milk there has been a strong feeling in favor of giving milk without any heating beyond body temperature. Dr. Janet Lane-Clayton, however, after a full analysis of all the work that has been done on this subject, besides original work carried out by herself, has shown that the advantages claimed are illusory. She shows that the "ferments" are almost wholly due to bacterial action, and that the minute quantities present in "pure" cow's milk are not only of no use to digestion, but are already present in larger quantities in the infant's own blood; further that the "protective substances" only appear in milk when the mammary gland is not in full activity, and even when present are destroyed in the child's intestine after the first few days of life. This thorough investigation will help to remove from the minds of many of us the uneasy feeling that by cooking milk we are depriving the child of some unknown living substance which is necessary to its perfect development.

Turning to the difficult subject of the bacterial content, I do not think that much can be said with certainty so far. Most people would be inclined to give dried milk a high place. owing to the very small number of organisms in it. I am not sure. however, whether the vigorous growth of lactic bacilli which occurs in freshly drawn milk is not of advantage to the child in the continuous bacterial warfare of its intestine. This of course does not apply to milk as ordinarily delivered at the house. and the advantage may be easily and cheaply attained in dried milk by the addition of a freshly prepared culture in small quantity to each feed. I have had striking evidence of the value of this addition. infants with pallor, sweating, loss of appetite and offensive stools showing almost immediate amelioration of thier symptoms and beginning to put on weight rapidly.

To sum up: we have in dried milk a food which contains the same substances as cow's milk and in the same proportions (except when humanized), which is digestible to a wider range of infants. which has obvious advantages of storage and distribution, and which appears to have no tendency to promote any of the latter nutritional disorders.

A SIMPLE SUBSTITUTE FOR "EIWEISSMILCH".*

BY PROFESSOR DR. STOELTZNER

Director, Children's Polyclinic and the Infant's Clinic of the University of Halle a—S., Germany.

The hot summer of 1911 brought with it, in Halle and elsewhere, a lamentable increase in infant mortality. The cases were numerous in which we felt the need of using Eiweissmilch. Unfortunately, however, the firm making the preparation was unable to meet the great demand. The few bottles that could be bought in Halle were insufficient to satisfy the needs even in the remotest degree, and doubtless many a baby succumbed that might have been saved by Eiweissmilch.

This dire need let me to the idea that it might be possible to find a substitute for Eiweissmilch of equal value. The course of my deliberations was about as follows:

The reduction of the whey and of the milk sugar in cow's milk can be attained by simply diluting the milk. What is the difference between cows' milk diluted with an equal volume of water, and Eiweissmilch? According to Finkelstein and L. F. Meyer[1] there are contained in

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*Translated from Munch. Med. Worchenschrift, Nov. 6, 1913.

	1-2 litre cows' milk	1 litre Eiweissmilch
Albumin	15.00 Gms.	30.00 Gms.
Fat	17.50 Gms.	25.00 Gms.
Sugar	22.50 Gms.	15.00 Gms.
P2 O5	1.22 Gms.	1.35 Gms.
Ca O	0.86 Gm.	1.44 Gms.

Thus, Eiweissmilch, as compared with cows' milk diluted with an equal volume of water, contains 100 per cent. more albumin, 43 per cent. more fat, 33 per cent. less sugar, 11 per cent. more P2 O5 and 67 per cent. more Ca. O.

The differences in the content of fat, sugar and phosphoric acid do not explain the extraordinary therapeutic superiority of Eiweissmilch. This applies particularly also to the one-third smaller content of milk sugar in Eiweissmilch. The importance of the sugar reduction was doubtless at first over-estimated; and Finkelstein and L. F. Meyers as their experience increased grew more liberal as regards the addition of carbohydrates to Eiweissmilch[2] and other writers agree with them in this respect.[3] The essential characteristic of Eiweissmilch is the very high albumin and calcium content.

It then occurred to me that the mixture of equal parts of cow's milk and water might be enriched by the addition of casein -calcium. On adding to a mixture of equal parts of milk and water 2 per cent. of casein-calcium having a CaO content of about 2.5 per-cent., each litre will contain

Albumin	34.50 Gms.
Fat	17.50 Gms.
Sugar	22.50 Gms.
P2 O5	1.22 Gms.
Ca O	1.36 Gms.

This composition is so closely similiar to that of Eiweissmilch that I decided to try milk dilutions enriched with casein-calcium in the place of Eiweissmilch.

Casein-calcium could not be bought; I therefore undertook to make it myself. I diluted skimmed milk with 4 parts of water, acidulated the liquid faintly by means of acetic acid, filtered off the coagulum, dissolved it in water with the aid of a small quantity of potassa solution, reprecipitated it with a little acetic acid, and dissolved this second curd in water to which 2.5 per cent. of CaO had been added. In this manner I obtained a nice solution of casein-calcium resembling milk. I did not succeed, however, in obtaining the casein in a serviceable dry form from this solution.

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[1] Jahrbuch fur Kinderheilkunde, Vol. 71, 1910.

[2] Finkelstein and L. F. Meyer: Munch. Med. Worchenschrift, 1911 p. 340. Benfey: Jahrb. f. Kinderheilk., Vol. 75, Nov. 3, 1912.

[3] For example, B. Birk. Monatschr. f. Kinderheilk., Vol. 9, No. 3.

With these preliminary preparations the hot season of the year passed by without arriving at practical tests on sick children. As the heat decreased the diminished demand for Eiweissmilch could be met regularly, and my interest in casein-calcium lagged temporarily as against other investigations. It was in February of 1912 that I thought of resuming a trial of diluted milk enriched with casein-calcium in the place of Eiweissmilch. I then entered into negotiations with a firm of prominent chemists of Grenzach, requesting them to prepare for me, for experimental purposes, some casein-calcium in powder form and with a CaO content of 2.5 per cent.

The firm in question acceded to my request with commendable willingness. However, although all possible technical facilities were available, it was not possible to furnish promptly a fine granular and readily soluble casein-calcium. Ie required several months effort to overcome the difficulties to a considerable extent. I received the first small experimental samples in April 1912; but it was the middle of July before I could obtain sufficient regularly of a serviceable product; nevertheless the hot season of 1912 was embraced in the experiment period. Altogether the period in which I used casein-calcium uninterruptedly in the treatment of nutritional disturbances of infants was a little more than six months.

The casein-calcium was in the meanwhile perfected more and more as regards its fineness and constant free solubility. The present article, named Larosan, may be regarded as free from all objections. It is a mobile, fine, tasteless, white powder, which dissolves nicely in hot milk and whose aqueous solution is neutral in reaction.

The preparation of casein-calcium milk was regularly done as follows: 20 gms. were stirred up with about one-third of half a litre of cold fresh milk; in the meanwhile the remaining two-thirds of the half litre of milk were brought to the boiling-point. Then both were mixed, and boiled for five minutes under constant stirring. Finally the mixture was passed through a hair sieve and added to an equal volume of diluent.

The diluent consisted, according to the state of the case, either of boiled water or barley gruel or flour decoctions.

Sugar was not added during the first few days, and not until the stools had become more solid. When this occurred sugar was added to the diluting fluid, cautiously increasing from 1 to 5 per cent., and in exceptional cases even more. The best for this purpose proved to be maltose—I preferred Soxhlet's nutritive sugar; many but not all children stood the addition of beet sugar up to about 2.5 per cent. to the diluent. I refrained completely from the use of milk sugar.

To begin the treatment with a water diet for 12 to 24 hours I found necessary only in toxic cases. I made the intervals between the meals at least three hours. The quantity given at each feeding was about the same as that usually observed with Eiweissmilch; yet I was on the whole a little more liberal, as I never gave per meal less than 20 gms., and as a rule increased rapidly to the calorically sufficient quantity without obtaining any less favorable results. Naturally, before sufficient quantities could be tolerated, besides this casein-calcium milk liberal amounts of boiled water or diluted fennel tea without sugar had to be administered.

This new product casein-calcium was tested clinically first at the St. Elizabeth Children's Home in Halle a-S., which is under medical directions of Mrs. Doctor Stoeltzner, on 34 infants suffering with nutrition disturbances and who could be observed clinically for months. The experiences gleaned from these children were confirmed by 19 dispensary cases, by a series of cases in private practice, and finally by 23 babies treated with Larosan since Nov. 30, 1912, at the new Halle Pediatric Clinic.

To enter into the details of the individual cases would exceed the bounds of this communication and will therefore be reserved for another occasion. I can briefly summarize my results in the statement that casein-calcium milk accomplished at least the same as Eiweissmilch.

As a matter of fact, in the case of Eiweissmilch, too, there is not one homogeneous action, but two different actions which are combined in a very happy manner. One is the antidyspeptic action which shows itself in the formation of soap stools. This product, evidently, acts by virtue of the casein content favoring intestinal digestion and thereby opposing acid fermentation, while the calcium constitutent serves to increase the lime soap formation in the intestines. The amount of fat in casein-calcium milk is apparently fully sufficient for the formation of soap stools; indeed, a smaller fat content would probably rather be an advantage.

The second action of Eiweissmilch, and which is so pronounced also in casein-calcium milk, is a rapid increase of the tolerance for cow's milk. This action is clearly seen in children with serious disturbance of the tolerance for milk who for the time being do not pass dyspeptic stools. Here almost immediately the body weight begins to increase under the feeding with casein-calcium milk and with it recovery sets in.

As regards the modus operandi of this tolerance increasing action, I have my own opinion, stated fully in my book on oxypathy. In the case of casein-calcium milk as well as that of Eiweissmilch, lime soaps may be formed in the intestines in consequence of a relative excess of calcium over phosphoric acid, without liberation of free phosphoric acid arising from the decomposition of the higher fatty acids by calcium phosphate; and, in my opinion, phosphoric acid being a noncombustible acid, tends to diminish the tolerance. Finally, the practical usefulness of infant foods is neither increased nor diminished by theoretic explanations.

Casein-calcium milk cannot claim to be something essentially new; all there is new about it is its physical form. It is, so to speak the active principle of Eiweissmilch. But it is far ahead of Eiweissmilch in practical use, indeed, in at least one respect it is even superior to Eiweissmilch in therapeutic action, to wit: the children do not become worse during the first few days of the treatment as they frequently do under the treatment with Eiweissmilch. This is a most remarkable observation, which I am at a loss to explain but which nevertheless is based on fact. The next most important advantage it has over Eiweissmilch is its considerably lower price. Moreover, it is more compact in form, and its better appearance and better taste appeal particularly to older children. As a matter of fact it renders excellent service also in older children, in suitable cases; of this I have repeatedly satisfied myself.

SOCIETY TRANSACTIONS

THE NEW YORK ACADEMY OF MEDICINE

Section of Pediatrics*

Stated Meeting Held March 12th, 1914

DR. WILLIAM P. NORTHRUP, IN THE CHAIR

Presentation of Patients.—Dr. John J. Moorhead presented four patients which served to illustrate results obtained in the treatment of fractures of the femur by the transfixation method. Three of these children had been treated at the Harlem and one at the Post-Graduate Hospital. In one instance there had been a fracture of both the femur and the pelvis; in the others the fracture was of the femur only. One of these patients had been treated with Buck's extension with the result that a great deal of soft callous was formed. Under anesthesia this was broken up and an open operation done before the transfixation apparatus was applied. This patient showed a little more shortening than the others. The shortening in the other three cases was from one-quarter to one-eighth of an inch. All these patients had good knee function.

Transfixation Method of Treatment of Fractured Femur in Children.—Dr. John J. Moorhead pointed out the limitations of the operative method and of the various extension apparatus in the treatment of fractures. The various suspension methods might be used with advantage in children up to the age of three years, but after that age they were not likely to be satisfactory. The author's series of cases upon which his paper was based numbered eight children ranging in age from five to eight years. He had performed his first operation of this kind with a carpenter's bit and augur. He then devised a steel drill with a detachable cutting point. It was made of three-sixteenth inch nickel steel. The method of procedure was as follows: After the child was anesthetized the location in the distal portion of the fractured bone chosen for transfixation was painted with iodine. The drill was then introduced through the soft tissue, the bone and the soft tissue on the opposite side until it reached the skin. It must not be permitted to enter the medullary canal, the joint or the epiphyseal line. The cutting point was then detached and a simple contrivance attached to either end of the drill to which in turn was attached the cords and weights. This method was applicable to fractures of the tibia, the humerus, and the femur, but it was particularly adapted to the latter. In fractures of the leg as much as thirty-two pounds could be applied. This procedure was applicable in cases in which other methods had failed, in overlapping fractures, comminuted fractures, old fractures, fractures of the condyle and in almost all fractures where ordinary methods could not be employed. It was preferable to plating because it was a much simpler and less expensive operation, requiring less time and less risk of infection; neither did it necessitate a secondary operation as plating so often did. The patient was under anesthesia only fifteen minutes, and did not suffer pain during convalescence. Nursing was a simpler matter than with other methods, and above all the results in respect to function and deformity were much more satisfactory than by the other methods. There was rarely ever shortening and in some instances there was lengthening.

Guaiacol Poisoning by Absorption With Report of a Case.—Dr. L. A. Sexton said he felt it his duty to call the attention of the members of the profession to their experience with guaiacol as a local application in the treatment of scarlatinal arthritis at the Willard Parker Hospital.

The value of guaiacol as a local anesthetic had long been recognized and because of its power to relieve pain it had found its way into the treatment of painful and swollen joints from whatever cause. Guaiacol was the chief constituent of beechwood tar, being that portion which distilled over between 200 and 205 degrees C., and was subsequently purified; or it might be prepared synthetically from catechol by menthylating or from orthoanisidin by diazotizing and boiling.

The poisoning occurred in a child three years of age who was admitted to the hospital February 10, with a moderate attack of scarlet fever. The disease progressed in the usual way and there was nothing abnormal discovered in the physical examination of the child. The temperature gradually came down and reached normal on the seventh day of the disease and remained normal until March 4, when the patient developed a cervical adenitis.

On March 10 he developed a severe otalgia for which myringotomy was performed, and this was followed by a profuse purulent discharge from the right ear. On March 12, the urine showed faint traces of albumen and a few granular and epithelial casts. The patient complained of pain in the right knee, right elbow, and right wrist. The other sequelae of the disease cleared up, but the arthritis continued, the joints being swollen, painful and tender. On the morning of March 21st these painful joints were painted with a 50 per cent. solution of guaiacol in glycerine. This mixture had been previously used with no bad results and had seemed in many cases to allay pain. No change was noted in the child's condition until the following evening when his pulse became rapid and weak, and he became cyanosed and vomited all the nourishment taken during the night. Large quantities of brown urine were voided and it was thought that the child had suddenly developed a severe nephritis engrafted on the former attack, and he was treated accordingly. The joints were again painted with the guaiacol mixture on the following morning. At 8:30 on this same morning the writer diagnosed the condition as acute guaiacol poisoning from absorption. The patient was vomiting and very restless and the cyanosis gave place to a deadly pallor. This continuously increased as did also the restlessness. The pulse became imperceptible, the respiration rapid and shallow, the child's face more anxious, the pupils dilated. The patient died at eight p. m., just thirty-four hours after the application of the guaiacol.

The mixture used on the child and also several specimens of the guaiacol were examined by the chemical laboratory and found chemically pure.

The urine smelled strongly of guaiacol and responded to the clinical tests for the same. The color was black; reaction, acid; specific gravity, 1018; albumen, sugar and indican, negative; blood and hemoglobin negative chemically and when examined with the spectroscope and microscope.

Discussion.—Dr. John Winters Brannan said that this form of poisoning described by Dr. Sexton recalled the condition known as carboluria. In carboluria the urine was green. They used to meet this form of poisoning when it was customary to flush out abscesses with strong carbolic solution.

The Peril of Delay in the Diagnosis and Treatment of Intussusception in Infancy.—Dr. Edward Wadsworth Peterson called to mind the years of educational effort required to place the treatment of appendicitis upon a purely surgical basis. Acute intussusception was far more dangerous to life than appendicitis, and theoretically at least, belonged exclusively to the surgical field. Experience had taught the hopelessness of expectant treatment and the relative futility of all aerohydrostatic measures.

The clinical picture in intussusception was more constant and unvarying and the symptoms more uniform and characteristic than in any other type of intestinal obstruction. In spite of this no class of cases was more often unrecognized and more habitually mismanaged. Because of the failure to make diagnosis or the delay in treatment, the mortality in this disease was also disgracefully high. It was fortunate that hydrostatic pressure and gas or air inflation succeeded in a limited number of cases, for such measures were often persisted in until the time for a necessary operation had passed. Ladd had collected 216 cases treated by this method with a failure in 81 per cent. Leichenstern, in a study of 557 cases of intussusception, had placed the mortality at 73 per cent., and during the first year of life at 88 per cent. After a careful study of the statistics one was impressed by the fact that "cured" cases were almost invariably diagnosed and treated early. Cases recognized and treated during the first twenty-four hours gave a mortality, in experienced hands, of not over 10 per cent. Cases treated after two days had passed had little chance of recovery. Clubbe treated 173 cases of which 16 were successfully reduced by enema. Of the remaining 157 cases operated upon the results were as follows: Of the first 50 cases, there were 25 deaths and 25 recoveries; of the second 50 cases operated upon there were 12 deaths and 38 recoveries, while in the third series of 50 cases there were 4 deaths and 46 recoveries. In the last 25 cases treated by laparotomy there was not a single death. The secret of this remarkable success was early diagnosis and prompt surgical treatment. A search of the literature revealed but eight successful resections in infancy; laparotomy should be performed before resection became necessary.

No other serious surgical affection of the abdomen could be so early diagnosed. Generally speaking the infant was seized suddenly with severe abdominal pain, more or less pallor, shock, and relaxation. Vomiting usually occurred at this time. Later there was straining and blood and mucus in the stools. This typical picture together with the presence of an abdominal tumor but it was often difficult to palpate. The storm of pain had subsided, a period of calm followed during which the infant appeared perfectly well. Later the pain returned and was intermittent and paroxysmal in nature and accompanied by straining, but there was not the pallor and shock that ushered in the initial attack. If the patient were seen during the calm period, the diagnosis was apt to be overlooked unless the history was carefully considered. Vomiting was rarely a prominent symptom until late in the disease; when it occurred early and was persistent it was significant of strangulation of the blood supply to the bowel. Rarely was the vomiting fecal. In every intussusception there was present an abdominal tumor but it was often difficule to palpate. Too much emphasis had been placed on the sausage-shaped tumor of the textbooks; the tumor was more often a rounded mass, generally quite movable and resembling a gland; it might occupy any portion of the abdomen. Where the tumor was oblong or sausage-shaped it was curved with the concavity directed toward the umbilicus. If the tumor could not be felt abdominally, then bimanual rectal examination should be made. Under anesthesia one seldom failed to discover its presence. Later toxemia developed as the result of injury to the wall of the bowel and from decomposition of the intestinal fluids The late picture was that which occurred in every variety of intestinal obstruction. Ileoocolitis and purpuric diseases had occasionally been mistaken for intussusception. In ileocolitis there was fever, diarrhea with mucus and blood in the stools, and bile, feces and flatus were passed. No abdominal tumor was present. The purpuric diseases were rare in infancy and hemorrhages elsewhere than from the bowel usually gave a clue to the correct diagnosis. It must not be forgotten that intussusception might develop as a complication of these diseases.

The only certain method of treatment in intussusception was early laparotomy with manual reduction of the invagination. Although spontaneous reduction and sloughing of the intussusception had in rare instances taken place one should never expect or await such an outcome. Like strangulated hernia or fulminating appendicitis, it was a condition demanding immediate operative interference. The operation should be performed as quickly as was consistent with safe and thorough work. The incision should be made in the right rectus as three-fourths of the cases originated in the ileocecal region. In relieving the intussusception it was best to begin at the apex of the intussusception and carefully "back up" to the point where the invagination began. If gangrene had occurred or reduction was impossible, resection and intestinal anastomosis should be performed. In all early operations where invagination occurred in the ileocecal region to remove the appendix, for it might in certain instances be a causative factor in the production of the obstruction. In closing the wound one should reinforce the layer sutures of catgut with through and through tensions sutures.

Dr. Leon T. LeWald said that through the kindness of Dr. Gould he had seen a case of intussusception in a male child sixteen months of age. The child was taken suddenly ill one morning and by noon was considerably worse; at four p. m. he vomited. The following morning Dr. Gould had asked him to confirm a diagnosis of intussusception, and asked whether he thought it was dangerous to administer bismuth for the purpose of getting an X-ray. Dr. Wald said he replied that there was a wrong impression as to the danger of administering bismuth in such cases; there was no danger provided the bismuth was administered carefully and in moderate amounts.

The child was taken to the hospital and 75 grams of bismuth in 250 c.c. of suspension medium was given and inside of thirteen minutes they had the X-ray and had confirmed the diagnosis and located the exact site of the intussusception. The child was taken to the operating room immediately and a successful operation performed; the intussusception was found in the ileocecal region just where the X-ray had indicated. The ilium had traveled all the way back to the cecum and could be outlined by gas in the invaginated portion of the gut.

Dr. LeWald said that this was the second case of the kind diagnosed by bismuth and the X-ray that had come under his notice, the first having been presented at the Medical Society of the State of New York last year. In Dr. Gould's case the tumor could not be felt even under anesthesia.

Dr. H. H. M. Lyle said that Dr. Peterson had given them a most able presentation and had impressed upon them the importance of early diagnosis in cases if intussusception in children. Early diagnosis was the keynote of surgical success.

Dr. Peterson claimed to have reported the first cases of this kind recorded in literature, but Dr. Lyle said while he had not searched the literature he had seen four cases in which resection had been performed in children, one of them being in 1901. None of the patients was over three years of age and one was an infant only a few days old.

In regard to the danger of administering bismuth, one should be guarded in making statements as to the harmlessness of this procedure. The result of administering bismuth in the face of intestinal obstruction was apt to be serious and fatalities had been recorded. One should consider very carefully when confronted with the toxemia attendant on intestinal obstruction, of adding another element to an already serious condition. Dr. Lyle had been called in to operate on a case of acute intestinal obstruction which rose as the result of bismuth X-ray examination. One must remember that the condition in the obstructed bowel was quite different from that of a normal one and that bismuth poisoning might occur.

Dr. Everet W. Gould said that in reference to the case which Dr. LeWald reported that the clinical symptoms had been sufficient to make a fairly definite diagnosis, but that the X-ray examination which was made while Dr. Walton Martin was preparing for the operation clinched the diagnosis and definitely located the lesion. The ileum had invaginated the cecum not more than three or four inches, further invagination having been prevented by an old adhesion. The child made a good recovery. No resection was necessary.

Dr. Northrup asked Dr. Gould whether he could feel the tumor.

Dr. Gould replied that when he examined the child the previous evening he thought he felt a very slight resistance in the right iliac fossa, but the following morning he was unable to make out any tumor, and after the anesthetic had been administered Dr. Martin was unable to make out any definite tumor.

Dr. J. Finley Bell of Englewood, N. J., thought the general practitioner found himself in a rather difficult position when confronted with the apparent danger of an operation in a young child. The danger of a major operation seemed very great in comparison with the introduction of air and water. Many physicians were laboring under a false impression as to the ability of young children to stand operative measures. This impression had probably been strengthened by the fact that in cases which seemed to require operation it was delayed while consultations and manipulations consumed time and the child grew worse and came to the operation finally in no condition to withstand the ordeal. With early diagnosis and early operation it would probably be found that children bore operations much better than had been supposed.

Dr. John C. A. Gerster disagreed with what Dr. Peterson had said regarding the use of the right rectus incision. He said there was no question but that the median incision offered the most advantages. As has been said the intussusception might be in any part of the abdomen and the median incision gave readiest access to all parts of the abdomen with least trauma.

Dr. Gerster said that time was an important element and hence removal of the appendix unless it was gangrenous had better be left for a second operation in which speed was not such a vital necessity.

Dr. William P. Northrup said he had the misfortune many years ago to have reported two favorable cases of intussusception cured by the introduction of water. He had since considered this a great mistake and was trying to make amends. The first patient had been brought to the office of Dr. Louis K. Neff in the morning to consult about a vaccination. At two o'clock in the afternoon Dr. Neff was sent for and found the child in great pain. By six in the evening the diagnosis had been made and water was introduced. Dr. Northrup assisted on this occasion. Under pressure of the water he could feel the invagination give way. The child made a good recovery. A week later a case almost identical with this one came under his observation. Here, too, under the same treatment, the child recovered. These two cases illustrated all the points brought out by Dr. Peterson regarding the diagnosis of intussusception. Dr. Bell had struck the right note in what he had said regarding procrastination, that by the time the diagnosis had been made the child could no longer stand the operation. Speaking of the shock of operation it had been shown that in a child a few weeks old a gastroenterostomy could be successfully performed.

The Prevention of Gross Deformities in Pott's Disease.—Dr. Willard Percy Roberts gave a lantern slide exhibit demonstrating his method of treating Pott's disease and the results obtained thereby. This method had been advocated three or four years ago and seemed to be of real value in preventing gross deformities. The speaker showed slides illustrating cases inefficiently treated by plaster jackets and vertical suspension and one untreated case which could have been cured by proper treatment. Dr. Roberts stated that the method which he presented was most useful in treating deformities below the eighth dorsal vertebra, and that his talk related to lesions below that point. These deformities might occur in any part of the spinal column and their production occurred usually in three stages. The first consisted in the softening of the bone by the tuberculous process; the second, friction in rotation; and the third, the collapse resulting in deformity. The treatment of Pott's disease theoretically was to put the bones at rest and thus protect them against friction in rotation. To carry out this theory the routine treatment had been by braces and plaster jackets. The Sayre jacket and the Tallot brace had been devised fifty years ago and while they had been modified they had not been improved upon until recently. One could place reliance on these devices together with the chin brace in deformities in the high dorsal and cervical regions. The Sayre jacket immobilized perfectly and it appeared to accomplish the point desired, namely, immobilization of the spine and relief from weight. The vertebrae were separated somewhat and the patient received relief but when he got on his feet again the body sagged or telescoped and permitted pressure at the point of deformity, and there was again a little erosion necessitating a new jacket and thus it went from jacket to jacket. This was not always the case but when it did occur the results were deformities such as had been shown. When there was any considerable deformity the upright suspension did not overcome it. In order to accomplish the requisite hyperextension in the correction of a deformity due to Pott's disease Dr. Roberts had devised a simple apparatus consisting of an ordinary automobile jack to which was attached a horizontal bar. From the bar was suspended a sling which was passed around the patient's body at the point of the deformity and the hyperextension thus effected. While the patient was in this position the plaster jacket was applied. This method was particularly effective in correcting slight deformities and preventing new ones. Its application was also very simple, one person being able to put on a jacket alone where a number of assistants would have been required by the suspension method. When the plaster was applied with the patient in the hyperextension position there was not the same tendency to telescope that had been observed with other methods.

The speaker showed a number of slides illustrating the method of applying the sling, showing the gap between the vertebrae and the results of the treatment. There was extreme lordosis in some instances but Dr. Roberts believed this would not be maintained. In the cases treated early there was very little deformity. The tracings shown demonstrated that there was a reduction or a recession of the deformity in nearly all cases treated in this way. The same point might be made that was made by Dr. Peterson in reference to intussusception and that was true in other fields, namely, that the cases that came to treatment early did better than those treated later in the course of the disease. With this method of treatment the symptoms disappeared earlier, there were fewer abscsses developed and the patient's comfort was enhanced during the application of the jacket and the time of treatment.

Discussion on Dr. Moorhead's and Dr. Roberts' Papers.—Dr. H. H. M. Lyle said that Dr. Moorhead's cases spoke for themselves. Fractures of the femur in which there was over-riding gave considerable trouble and the ordinary extension methods often failed to overcome the deformity. In the Steinman extension method we had a valuable means which could be regarded as conservative when compared with open operation, plating, etc. The method was indicated in old fractures. The writer had shown such a case at the last meeting of the Surgical Society and the one presented by Dr. Moorhead was a splendid example of the possibilities of the method. It was indicated in certain cases of mal union and was the method of choice in all compound fractures. The method was simple, quickly performed, and the patient was strikingly comfortable. In inserting the pin four cardinal points were to be observed. The fracture hematoma must be avoided, the pin must not enter the medullary canal, the joint, or the epiphyseal line.

Dr. John C. Gerster said that up to the present time his experience with fractures of the femur comprised thirty cases, eleven of which were in children ranging from four to fifteen years of age. He did not agree with Dr. Moorhead about certain minor points of technique. The sharp pointed nail bored through the bone without any difficulty, so that a rod carrying a detachable drill was an unnecessary refinement. A preliminary incision was also not necessary; it had been tried in Germany and given up. Steinman used the nail as a drill fixed in a brace. The pin was simply a bit of steel rod, pointed at the end.

Dr. Moorhead said that the anesthetic lasted only fifteen minutes. Dr. Gerster used nitrous oxide anesthesia during only the three to five minutes required actually to transfix the limb. Infection need not be expected with this method if the proper asepsis was maintained. Pain and discomfort were less than with an efficient Buck's extension. Nursing also was easier than with a Buck's extension; the child could raise the hips clear of the bed without the slightest pain. In the presence of contusions or abrasions about the knee, one could safely wait a week or ten days without fear of getting a bad result. In neglected fracture of some weeks standing, nail extension was extremely valuable.

In malunion with much shortening brilliant results had followed exposure and separation of the malunited fragments with simple closure of the wound and application of nail extension. Naturally more weight was required than in recent cases. The chances of union were much better with nail extension than with Lanre plating, because in the former none of the osteogenetic tissue was removed; besides in nail extension, massage and passive motion might be begun as early as the fifth day, as was mentioned by Dr. Moorhead.

Dr. Henry Ling Taylor said he was very much interested in the cases shown and the results were most admirable. He had been particularly interested in the positive manner in which Dr. Moorhead had condemned plating as a routine measure. Personally, he believed that the introduction of plating had done much harm because the man practicing in small towns was led to use this method and might keep it up long after the man with greater experience had seen the bad results and given it up. Plating was really valuable in only a few cases, while there were many cases that had gone wrong through this procedure.

There were one or two methods of treating fractures of the femur which were not mentioned by the reader of the paper. One was VanArsdale's triangular splint to hold the thigh in the fixed position; this was applicable to fractures in the upper half of the femur, and the same result could be obtained by flexing the leg, reducing the deformity, and putting it in a plaster spica in that position. This was done quite frequently in babies at the Hospital for the Ruptured and Crippled and gave good results. The other method was by the use of Hawley's table, which was marvellously efficient in fracture cases, and by it the deformity could be reduced in early cases and a plaster splint could be applied without moving the patient.

Dr. Taylor said he was interested in Dr. Roberts' work as well as in the operative method of treating Pott's disease. The basic principle for treating Pott's disease had been laid down years ago by Taylor and Sayre and there had been no better methods suggested until within the past few years. During all those years the subject had remained in statu quo. Their principles were correct, namely, to put the part at rest in the best possible posture. Better results were obtained in private practice than in clinic work, though many cases did will in clinics. He recalled a case of a girl who had been treated by C. F. Taylor from 1871 to 1879 and cured with recession of the deformity. She returned in 1909, thirty years after her cure, and having been married and had children, she had no deformity. This showed what was possible in favorable cases, but all cases were not so favorable even in private practice. The brace treatment required a long time, though it was not necessarily irksome to the child or the parent as the pain and discomfort of the patient were promptly relieved and the general condition of the patient improved, but it was necessary to wear a brace for many years, and in even these cases the result was often mediocre. Other cases did well and had good backs at the end of three or four years.

Some years ago the profession had Callot's disease, (Dr.

RETROSPECT OF CURRENT PEDIATRIC LITERATURE

Diseases of the Alimentary System.

Under the Charge of

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An Experiment in Collecting Human Milk for Hospital and Dispensary Use. Dr. Raymond Hoobler read this brief paper in which he said that he had received the inspiration for this work from Dr. La Fetra's service at Bellevue. He had found that among the poor mothers who had more milk than was required for their own infants were willing to sell the surplus. The mothers who were willing to sell their milk were subjected to the Wassermann test and were instructed in matters of diet and hygiene and shown how to draw their milk. The milk was also subjected to examination. The cost of the milk by this plan was ten cents an ounce. This was a plan that was of benefit to the poor mothers who needed the financial aid and at the same time provided mother's milk for premature or delicate infants who could not survive without it.

A Simple Method for Making Casein Milk. Dr. Raymond Hoobler read this paper. He stated that the difficulty of making casein milk had stood in the way of its more general use. The process was so complicated that it was not practical in the home. Even if the casein was passed through a seive five times the curd still settled and even clogged the nipple, making it necessary for someone to assist the baby in getting its food. He had found that casein flour could be used in making the casein milk, and that the work of preparation was by this means very simplified. The mixture was smooth and the curd did not settle in the bottle. They had used these casein flour mixtures at Bellevue during active service in August and September, 1913. The fat-free buttermilk was used with the casein flour. The casein flour cost forty cents a pound and one pound made forty-four quarts of casein milk; to make the same amount from casein curd would require twenty-two quarts of milk.

An Experiment in Milk Stations. Dr. S. V. Haas read this paper, in which he reminded them that he had stated in a discussion before the Section in March, 1911, that there were two serious errors in the milk stations as constituted. The term milk station was bad because it led the laity to consider milk as the important factor and cow's milk feeding as the method to be followed, thus subordinating by inuendo breast feeding and hygiene. Again the dispensing of milk was unnecessary either as a premium or as a method of furnishing good milk. It was also undesirable for the mother who was required to go to a distant station for her milk supply. The practice of dispensing milk was not desirable for the station since it increased the cost of maintenance. It also deprived the authorities of a method of inspection not otherwise possible. If the milk were purchased in open market and the child became ill, the source of supply could be investigated at once. In order to test these points rooms were set aside in Lebanon Hospital under the auspices of the Social Service Department and the Pediatric Department of the hospital. The training school supplied the nurses who received the social service experience as a part of their course, while the Pediatric Department furnished the medical supervision. Since April, 1912, 455 babies had attended the milk station; of these 384, or 84.4 per cent., were breast fed; 13, or 2.8 per cent., were on mixed feeding; 58, or 12.7 per cent.; were artificially fed; 14, or 3.0 per cent., died, two of which died of malnutrition. The average attendance was 19 infants and the average length of time under observation was 14 weeks. They felt justified in concluding that these stations should be called Baby Stations or some other name not containing the word "milk." Milk should not be dispensed at these stations for the reasons pointed out in the early part of the paper. A Baby Station could be successfully conducted without dispensing milk, and breast feeding would thereby be encouraged. The mortality statistics of a station conducted without the dispensing of milk compared favorably with those obtained by other methods.

Two Years' Observation of Milk Station Infants. Dr. Mark S. Reuben presented this paper. He stated that his study was based on about 1500 feeding cases observed at the Vanderbilt Clinic Milk Station and the Vanderbilt Clinic Pediatric Department since January 1, 1909. Nearly 500 of the cases had been observed for about one year. About 900 of the infants were artificially fed, about 500 were breast-fed and about 300 received both breast-milk and artificial feeding. Only 19 infants had died from January 1, 1912, to June 1, 1913, and of these five had been to the milk station only once. Of the remaining 14 not one died of gastroenteritis. There were four factors which were conducive to a low mortality at the milk stations, education of the mother, clean milk, the nurse, and the physician. Of these the eductation of the mother was by far the most important element, though the others were important adjuvants. Anything that prevented the nurse from visiting the homes of the mothers regularly and frequently detracted from the efficiency of the milk station, as it was only by this means that the mothers could be taught to prepare the formulæ accurately and the other details of infant hygiene could be impressed upon her. The best advertisement to induce the mothers to bring their infants to the milk station was the knowledge that the milk station babies were doing well. They had found that the statement that breast feeding was falling into disrepute was not borne out by their experience. There were three reasons why so many of the infants brought to the milk stations were artificially fed: (1) Because of the large percentage of mothers who did outside work after marriage; (2) Because many mothers became gravid before their infants were three or four months old: (3) Because of the indifference or ignorance of the attending physician who was responsible for the artificial feeding of many infants that could and should have been breast fed. The essayist believed that these mothers should be taught how to prevent conception, as frequently the exhausted condition of the mother induced by excessive child-bearing resulted in premature and atrophic infants. Such teaching would have a great influence in reducing infant mortality and would permit of breast feeding in many cases that were artificially fed. In cases of insufficient breast milk every expedient should be tried before resorting to supplementary feeding. Even when supplementary feeding was employed, effort should be made to increase the supply of the mother's milk and as soon as this became sufficient the supplementary feeding should be discontinued. The only reliable method of determining the sufficiency of the breast milk was by observing the infant for at least one week when it was on the breast alone. It was paradoxical but true that the most difficult task the physician had was to persuade mothers not to institute artificial feeding when the milk supply was sufficient in early infancy, and to induce them to begin artificial feeding in later infancy when the breast milk was very scanty and the infants were practically starving. Very few women who visited the milk stations could nurse their infants longer than twenty-seven to thirty-two weeks. It had been their rule to wean the infants when their weight became stationary, or they lost weight for two successive weeks, all other causes having been excluded. Weaning in two weeks at this time was preferable to mixed feeding until the end of the first year. In later infancy when the milk supply became insufficient, it was also of inferior quality and the infants put on mixed feeding did not do as well as those weaned and fed artificially. The cases that in early infancy did not do well on breast milk were those in which the supply did not increase, and these cases did better if taken off the breast entirely. One should try supplementary feeding for at least a month before taking the child off the breast entirely. If, however, at the end of this time there was no increase in the milk supply one should not hesitate to take the child from the breast entirely. This was not a plea for artificial feeding, but one should not wait too long before beginning the artificial feeding. The highest weight curve at the end of one year was shown by those infants who were breast fed until the supply became insufficient, usually from twenty-seven to thirty-two weeks, and then weaned in two weeks and put entirely on artificial food. The second highest weight curve was shown by those infants artificially fed from birth, and the lowest weight curve at the end of one year was shown by those infants breast fed for the entire year, being due to mild starvation after the sixth month. The breast fed children weighed more than the artificially fed at the end of six months, but after that the artificially fed children gained much more rapidly. Thekeynote of successful artificial feeding at the milk stations depended on the degree of simplicity of the milk formula and how well the mother understood its preparation. Over 90 per cent. of the artificially fed infants did well on simple dilutions of whole milk to which carbohydrates were added to make up the requisite number of calories. In twelve hundred cases they had met only one case in which there was an idiosyncrasy to milk. Of 200 feeding cases that came to their attention at the milk station, only 19 per cent. had been put on milk formula, and 80 per cent. had been on patented foods. The explanation of this was ignorance as to how to prepare fresh milk. Infant feeding could be made both simple and successful in the majority of cases. They never used lime water, barley or oatmeal water or top milk mixtures, unless there was an indication for their use. They were thoroughly convinced that in most cases they were useless and could be dispensed with. In feeding healthy infants they usually began with a one in three mixture; seldom was it necessary to prescribe one more dilute. The quantity given at each feeding was increased by one ounce every four weeks, and the strength of the mixture was increased as the weight and the symptoms indicated. On the whole they had found that infants could take much stronger mixtures than were usually given. They could usually take whole milk at six and one-half to seven months. No infant was given more than one quart of milk daily during the first year. When an infant stopped gaining on that quantity flour was substituted for part of the sugar and later cereals in the form of gruels were added. At nine months broths and zwieback were given, and vegetables finely mashed when indicated. A dextrine maltose preparation of sugar was given in every case unless there was some contraindication (one level teaspoonful to every ten ounces of mixture). This sugar was contraindicated in infants under two months of age, in those having a tendency to constipation, and when there was a tendency to vomit. It was distinctly indicated for babies that were much under weight. They had found that dextrin maltose caused the greatest gain in weight, cane sugar less, and lactose the least. The effects of these sugars on the digestive tract was also different. Lactose had the least and maltose the greatest tendency to produce vomiting. Lactose was also the most laxative and dextrin maltose the least so of the sugars. Even in the feeding of sick infants they had found that the simple dilutions gave excellent results, though every sick infant was a problem in itself. In cases in which there were gastrointestinal symptoms they never gave dextrin maltose until the symptoms had subsided. In these cases they used the flours more freely than in healthy infants. In order to meet indications they had used skimmed milk and Eiweiss milch. The essayist presented a study in calories which he summarized as follows: The caloric estimation of an infant's food was of distinct value in beginning to feed a healthy baby on the bottle, as it gave a definite method of ascertaining about how much food the infant needed; in feeding atrophic and puny babies, since they knew that thses babies needed more calories than did normal infants; and in infants who were not thriving, since an estimation of the calories would sometimes reveal that the infant was getting a food too high or too low in calories. In studying the problem of why some infants did not thrive, they had been much impressed by the fact that the most common cause of this was the irregularity and infrequency of the visits made to the milk station; for an artificially fed infant to increased steadily in weight the food must be increased in quantity and in quality regularly about every ten to fourteen days. Other reasons for failure to gain properly were ignorance or stupidity on the part of the mother in the preparation of the formula, or some constitutional disease in the infant.

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Infectious Diseases.

Under the Charge of

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Clinical History of Scarlatina of Wounds. Hans Hahn (Monatsschr., f. Kinderheil., 1913, Bd. xii, H. 5) gives an account of a small epidemic of scarlet fever beginning in wounds of various kinds; some were burns, some cuts, and others cases of operation for empyema. etc. In the rapid outbreak of surgical scarlet fever in the clinic the surroundings took a large part. The empyema cases were all operated on in the clinic, and soon became infected. The other children came from the surgical wards and were operated on in the same room. There were in all seventeen cases of surgical scarlet fever. The cases began with a sudden rise of temperature, and sometimes a chill. In only a few cases was there vomiting. The exanthem began about the wound, and in some cases spread but little. The wound became reddened, swollen, gaping, macerated, and freely secreting. On the same evening or next morning a fine rash began about the wound. The mouth showed a rash on the cheeks and gums, but the tonsils were not swollen, showed no membrane and the cervical lymphatic glands were not enlarged. The glands near the wound were enlarged, however. The tongue showed the typical strawberry appearance. There was ear trouble in only one case. There was no albumin in the urine and no casts or blood cells. Rheumatoid and heart affections were never seen. The wounds healed kindly with primary union. The prognosis seems not to be bad in these cases, the general symptoms being lighter than in ordinary cases of scarlet fever. Death resulted from the primary surgical condition, not from the scarlatina. We appear to have had here extrabuccal inoculations of a not very virulent virus.

Meningitis Following Tonsillitis. E. Simerling (Deutsche medizinische Wochenschrift, Vol. XXXIX, No. 47), reports the case of a boy of 15 in whom meningitis developed in connection with a febrile sore throat—a retronasal angina seems to be a regular accompaniment of epidemic meningitis. There were two days of headache in this case with a little dizziness and tremor of the hands and then the lad dropped unconscious , delirium alternating with stupor, with other symptoms of severe meningitis. Striking benefit followed lumbar puncture which showed the fluid under high pressure. The clinical picture was extremely severe but terminated in recovery after nearly two months. The fluid contained 300 lymphocytes in 2 c.c. The fifth week a month's course of mercurial inunctions was commenced, using up 63 gm. grey ointment. Quincke has called attention to the benefit from mercurial inunctions in serum meningitis

Reinfection with Diphtheria. Reiche (Medizinische Klinik, Berlin, Vol. IX, No. 41) calls attention to the fact that the records of the Hamburg hospital show 394 cases of diphtheria in the last seven years, in which there had been a preceding attack of the same disease in previous years. In the last two years, of the 4,761 diphtheria patients, 5.8 per cent. were known to have had a previous attack; the largest proportion, 10.9 and 15.8 per cent., were in young adults up to 25, and in adults between 25 and 50. In an additional 1.6 per cent., the second attack of diphtheria was evidently merely a relapse. The data presented confirm the absence of any immunization by a single attack of diphtheria. There were more cases of diphtheria at Hamburg in 1911 than at any time since 1895; 573 of the 4,761 cases in the last two years terminated fatally.

Diphtheria Antitoxin in Human Blood. H. Kleinschmidt (Jahrbuch fur Kinderheilkunde, Berlin, Vol. LXVIII, No. 4) concludes that the diphtheria antitoxin so frequently found in the serum of individuals who have not had diphtheria is due to latent infection with diphtheria bacilli. Protective substances must have been found in sufficient quantity to avert an attack of the disease. He found antitoxin in the serum of two of 18 infants free from any history of diphtheria, and in ten to 16 others known to have had diphtheria up to a few months before and still harboring the bacilli. Technical details of his experiments are given.

Two Cured Cases of Tuberculous Meningitis. Reichmann and Rauch report two such cases from Professor Stintzing's clinic in Munchener medizinische Wochenschrift. Such cases hold good for themselves alone, for any general successful therapy of this disease does not yet exist. Of the two cases cited, we quote that in the adult first. This patient aged twenty-one worked in glass, was admitted to the hospital in a state of mental confusion. History as follows: Patient always well and of sound stock. His illness began four weeks before admission with weariness, headache, and stitch in the side. He continued to work, although somewhat feverish for several days, when he developed fever blisters, cough and expectoration. In six days this petty attack had run its course. Certain symptoms, however, seemed to reappear—chiefly a severe, persistent headache and stiffness of the neck. On this account he was sent to the hospital with the diagnosis of meningitis. Examined at the latter place he was found to be drowsy with fever above 39 degrees C., and high degree of nuchal rigidity. The pulse was but 68. Kernig's symptom was present, but the various reflexes were either absent or but slightly in evidence. Examination of lumbal punctate, when carried out with thoroughness and patience showed tubercle bacilli abundantly sufficient for diagnosis. By studying these punctates with especial regard to their inoculability to animals, it became apparent that the virulency of these punctates became less and less pronounced. In the second case, in an infant, the diagnosis was made in the same manner. The old clinical diagnosis so commonly discussed was reinforced by thepunctate finds. Of interest is the literary research of the authors, which show that up to the present time eighteen cases of tuberculous meningitis had recovered, those of the authors making twenty to date. But, as the authors state, what does this petty salvage signify against the tens of thousands of deaths from his cause in recent years?

Syphilis and Fever. Glaser in Medical Record speaks of several types of syphilitic fever, some of which have long been known. He mentions early syphilitic fever preceding the rash, and tertiary syphilitic fever. Aside from these, however, there are types of fever which are irregular and simply indicate mixed infection. The first modern description of sure secondary syphilitic fever is by Guntz and Fournier about 30 years ago. It was held to be present in about 20 per cent., of cases. Many years later Senator sought to differentiate early syphilitic fever from other acute infectious diseases. It should be remarked that the syphilitic fever is not always a reaction preceding the exanthem: for in certain instances the fever is purely symptomatic of certain local lesions. Despite some connection between exanthems and fever the early syphilitic fever cannot be so easily explained (since it is a minority symptom). Pure tertiary syphilis is even more difficult to account for. Much more readily comprehended are the secondary syphilitic fevers which are seen in luetic liver, luetic lungs and the like. Certain fevers in certain patients appear to suggest the possibility of late syphilis.

Orthopedic Surgery

Under the Charge of

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Arthritis Deformans. By Hayes, The Med., Council, April, 1914. The author supports the theory that arthritis deformans is due to bacterial infection, and gives the history of a case in which disease in its acute progressive form was accompanied by ovaritis with profuse leucorrhea. The diagnosis of old chronic cases is easy but that of the acute form is at times more difficult.

Hayes recommends most strongly the internal use of iodoform and guaiacol in the treatment of this disease. For locol pain he uses a wet dressing of a saturated solution of sodium hyposulphite in glycerine to which is added ichthyol to 20 per cent.

Infantile Paralysis—Causes and Treatment of Deformity. By Carling, Southern Cal, Practitioner, April, 1914. In infantile paralysis deformity is produced by the force of gravity, the contraction of strong muscles whose opponents are weakened or paralyzed by habitual posture, and by functional use. Muscles, ligaments, bones, and joints —all may be involved in the deformity. Atrophy of all tissues and retardation of growth of the affected member are almost always present.

Active treatment of the paralyzed muscles should not begin until the acute stage of the inflammation of the cord is passed, i.e., until,after one to four weeks, all tenderness and pain have disappeared in the limbs. Gentle massage and manipulation of the joints should then be given daily. The galvanic current may be employed to secure muscle contraction. But most valuable is the voluntary active muscle training by the patient himself, aided, as may be necessary, by the nurse or the mother or the physician. Braces should be used to prevent deformity and to enable the patient to use his limbs in standing and walking. A spinal brace may be necessary to prevent lateral curvature.

Operative treatment first aims to overcome established deformity and then to restore to the affected member the greatest amount of function possible and lastly to supplant apparatus. Muscle balance may be restored to a limb or a part of it by tendon transplantation, supplemented by the implantation of silk tendons if necessary. Stability of a limb may be secured by arthrodeses of joints, by the implantation of silk ligaments and by various other procedures.

Nerve grafting gave early promise of great usefulness, but so many failures have been recorded that it cannot be recommended at present.

The Treatment of Scoliosis. By A. Mackenzie Forbes, Surg., Gg. & Obstetrics, April, 1914. Scoliosis is probably the most complex deformity that exists, as the vertebrae, the ribs, the sternum, and the pelvis may all be involved. Lateral deviation of the spine, rotation of the vertebrae, and compression of the ribs go hand in hand. Any attempt made to correct the lateral deviation alone by side-bending only increases the rotation.

The author secures reduction of the deformity by side bending plus rotation, but of these two means the latter is the more important. The spine is flexed, the lower extremities are flexed on the spine, and the shoulders of the patient are rotated by means of the arms toward the side of the convexity (dorsal) of the deformity. The patient is then fixed in plaster in this position. Thus physiological scoliosis is produced in the opposite direction from the organic deformity and tends by the working of Wolff's Law to correct the latter.

Recumbency in the Treatment of Pott's Disease. By Geo. B. Packard, Am. Jour. of Orth. Surg., Jan., 1914. All too frequently are encountered cases of Pott's disease with marked dorsal deformity. This deformity could and should be prevented. It is due to the effect of the weight of the body borne upon the diseased bodies of the vertebrae. No mechanical device will remove this pressure upon the vertebrae so well as will a recumbent position. The spine, however, should be rigidly supported while the patient lies upon the back. A most efficient means to accomplish this is to place the patient in the posterior half of a plaster jacket which has been applied with the spine in a hyperextended position. Felt pads may be placed in the hollow of the cast beneath the kyphos from time to time, to increase the pressure over the deformity and produce correction. This treatment may be continued for a year or eighteen months, always in combination with as complete out-of-door life as possible.

Chronic Arthritis. By Milne, Journ. A. M. A., February 21, 1914. The author believes that practically all cases of chronic arthritis are due to an infective agent that gains admission to the blood through some portal of entry The large number of types of this disease are due to the different grades of virulence of the infecting agent and to the duration of time that the joint is exposed to its action. All the changes that occur in a joint are due to a definite imflammatory process within the joint which may be of any degree of activity and continuance.

In treating these conditions of the joint a distant focus of infection should always be most carefully and thoroughly sought for. Arthritis is not to be considered the progressive and hopeless disease it once was, as much can be accomplished in any stage to relieve the patient and to improve the condition of the joint.

Surgical Diseases of Childhood.

Under the Charge of

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Subcutaneous Tuberculosis Following Circumcision. Dr. Sydney T. Champtaloup's patient was a child ten months old, with a history of circumcision performed when he was seven weeks old, by a physician who, as ascertained later, was then suffering with laryngeal tuberculosis. The wound suppurated badly, and three weeks after the operation the right inguinal glands became enlarged and an abscess, which formed there, was incised. A week later a measles like rash developed on the face, body, and extremities. This slowly faded, but several small areas became indurated, and suppurated. The child also lost appetite and grew thin. Although each suppurated area was incised, most of them failed to heal after treatment of several months. At this stage the patient, first seen by the author, showed many suppurating foci on the body, face, and extremities, a number of which had failed to heal at all after incision. Many of the suppurating and ulcerated areas had purplish, indurated edges. The child was hectic, and greatly emaciated, and the diagnosis was in doubt. Cultures and smears were negative, but the condition was proved to be tuberculous as the result of inoculation of some of the pus into guineapigs. No tuberculous lesions were found other than those in substaneous tissues. Although extremely ill with little hope of recovery, the child, after an injection of tuberculin, promptly improved, and was apparently completely well, eight months later.—N. Y. Med. Journal.

Appendicitis in Children. Isaac Wood in Publication No. 2, issued by the Medical Faculty, Queen's University, Kingston, says that in children anatomically we find:

1st. That the appendix in the child is relatively larger and longer.

2nd. The walls are thinner, the meso-appendix is shorter, often less than half the length of the tube. This tends to kink or bend the appendix and to limit the blood supply, especially to the distal half.

3rd. The entrance from the caecum is funnel-shaped, the lumen is larger, the mucous membrane smoother and the valve of Gerlach often absent or ineffective, hence foreign bodies or morbid materials more readily find their way into the tube.

4th. The lmyphoid tissue in the appendix of the child is more abundant and the blood supply is poor, hence destructive processes go on more rapidly and the liability to gangrene and perforation is greater.

5th. The omentum is relatively smaller and less effective in walling off a gangrenous or perforated appendix.

Pathologically we note

1st. These inflammations of the appendix induce a greater effusion of serum in children than in adults.

2nd. That this effusion quickly becomes purulent.

3rd. The occurrenc of gangrene and early perforation is more frequent in the child.

4th. That abscesses are more likely to form and to rupture in children than in adults.

5th. That there is greater tendency to spreading peritonitis (Sprengel found 46.8 per cent. among his cases.)

6th. That intoxication of the system is more rapid and intense in children.

Clinically. These differential features assume more than ordinary interest and importance. We have not time to discuss them in detail. We simply mention some of the general principles.

1st. That appendicitis in the child is more sudden in its onset, rapid in its progress and intense in its symptoms than in the adult.

2nd. That the unstable conditions of the nervous system (peculiar to children) may lead to confusion or error and may delay or prevent a positive diagnosis.

3rd. That abnormal conditions are frequently met with in children which render the clinical phenomena vague and misleading, for example, right-sided pleurisy or pneumonia may simulate appendicitis—the pain, tenderness and rigidity being located in the right iliac fossa. Or in abnormal positions of the appendix (common in children) the pain and other symptoms may be found on the left side of the abdomen— in the epigastric region or under the costal arch.

We feel that a due appreciation of the anatomical, pathological and clinical features already noted should enable us to not only differentiate appendicitis in children from the same disease in adults, but to set it apart as a subject for special and separate consideration in its diagnosis, its prognosis and treatment.

We are told by eminent authorities that "the diagnosis of appendicitis is generally easy." This may be true in adults—it is not true in children. The recognition of appendicitis in the early stages, when operation would be successful, is extremely difficult. The cardinal symptoms of appendicitis—sudden acute pain in the right iliac fossa, tenderness over McBurney's point, rigidity of the right rectus muscle, vomiting, elevation of temperature, acceleration of pulse, etc., which are quite constant in the adult, are irregular, uncertain and have little diagnostic value in the child.

Wood has come to the following conclusions:

1st. The occurrence of appendicitis in children is much more frequent than generally supposed. It is seven times more frequent before the age of 15 than it is from 15 to 30.

2nd. A large percentage of the cases are not diagnosed.

3rd. A large percentage are diagnosed too late for successful operation.

4th. The literature should clearly state the features of the disease which are peculiar to children.

5th. An early diagnosis is imperative in children.

6th. The diagnosis should be followed immediately by operation.

The Responsibility of the Tonsil in Tuberculous Adenitis. F. S. Matthews in the Annuals of Surgery reports that histological examinations were made of 65 whole tonsils removed from children; 57 tonsils of patients not clinically tuberculous showed no tuberculous lesions. Of eight patients with tuberculous cervical adenitis the tonsils were found tuberculous in five. In two of the cases there was evidence of other than tonsillar source for the tuberculous infection (in these two cases the tonsils were not tuberculous).

The writer's results therefore, parallel those of Hurd, Judd and others. In cases in which there is clinical evidence that the tonsils are the source of tuberculous infection, tuberculous lesions in the tonsils have been found. Nevertheless, tuberculosis does not greatly enlarge these tonsils; according to Hurd, tuberculosis is to be found in the small buried ones and not in the large, soft and elevated varieties of tonsils. Matthews believes that, with a recognition of the frequency of the tonsillar source of infection, tonsils will, in the future, be more frequently removed to avoid a reinfection of the cervical glands by tuberculosis.

Surgical Treatment of Brachial Birth Palsy (Erb's Type). A. S. Taylor (Amer. Jour. Med. Sci., 1913, cxlvi, 836), whose earliest report on this subject was published eight years ago, says that the essential etiologic factor consists in the forcible separation of the head and neck from the shoulder on the side of the lesion. The deep cervical fascia, the nerve sheaths, the nerves, and the accompanying vessels are torn. After a time the resulting blood clot and torn structures form a dense cicatrix which prevents nerve regeneration. As a rule the injury involves the roots in order from above downward and may vary in extent from a slight injury of the upper root to a complete repture of the entire plexus. In some cases roots are torn from the cord itself. Secondary pathologic changes occur in the muscles, ligaments, and joint-ends of the bones. The paralyzed muscles fall into groups according to the roots injured. The characteristic attitude is one of marked inward rotation of the whole extremity, which is accented by the pronation of the forearm and hand. There is always some posterior displacement of the upper end of the humerus as compared with the normal side, and in a small proportion of cases there is complete posterior dislocation of the shoulder. Sensory disturbances are slight and usually soon disappear. Interference with growth is always present and is most marked about the shoulder girdle. Deformity usually increases with age. A cicatrix can easily be felt in the region of the damaged nerves, and is usually tender even after years. The prognosis is bad. There is nearly always some degree of deformity and paralysis which persists. Operation gives the best prospect for a useful arm. The best time for operation is as early as the general condition of the individual patient will permit (three to twelve weeks). In the few cases in which complete spontaneous recovery will occur, the paralysis is usually not extensive, improvement starts early and continues rapidly, and operation is evidently contraindicated. In debatable cases operation amounts to early exploration, with repair of such damage as is found. There is exceedingly little danger to the operation, which amounts only to an incision through the skin and fat at the base of the neck. Up to the time of operation the extremity should be held up in a sling to take its weight off the damaged nerves and paralyzed muscles. In the cases where roots have been torn from the cord, they must be laterally implanted into the neighboring roots, or if the latter have been damaged enough to require resection, all of the distal nerve trunks may be sutured in a bunch to the proximal roots still attached to the cord. After operation the head and shoulder must be held in approximation for weeks by a steel brace fitted before operation. After-treatment must be systematic and persistent. Results will never be perfect, but operation will give improvement much greater than that obtainable by any other method.

Safety Lessons for Children. Hitherto the instruction given children as to how to avoid street accidents has been mostly by talks and pictures, but the American Museum of Safety is now conducting a safety campaign in vacation schools and recreation centers in Brooklyn where the instruction includes an object lesson to each child in safety. The pupils are taught the correct way to board and alight from a trolley car and how to cross a street in the safest way. Girls are taught how to get on and off a car with a doll or bundle in one arm.

BOOK REVIEWS

Marriage and Genetics.— Laws of Human Breeding and Applied Eugenics. By Charles A. L. Reed, M.D., F.C.S., Fellow of the College of Surgeons of America; Member and Former President of the American Medical Association; Professor in the University of Cincinnati. $2.00. The Galton Press. 1913; Cincinnati, Ohio.

The eugenic movement has come to stay, so the profession might just as well begin now to take the doctrine seriously as later on. When a man with the international reputation of the author deems the time propitious for him to raise his voice in behalf of this movement, it is certainly time for the rest of us to sit up and take notice. This book is one that every sober-minded physician should thoroughly familiarize himself with so that he can give, when requested, intelligent advice upon the subject. We cannot refrain from including extracts from the author's preface as hereby the reader will be more fully acquainted with the purpose, aim and scope of this volume.

The motive prompting the effort was a desire in some measure to overcome the ignorance which, in too many instances, keeps innocent victims from protecting themselves and their offspring from disease and degeneracy. An incidental object was and is to avert many of those conditions that destroy the possible happiness of the married state and convert the bridal chamber into the ante-room of the divorce court.

This broadened purpose made it necessary to consider the laws, the natural laws, of human breeding inherent in the individual, as the very foundation of my thesis. We are constantly hearing of these laws, but their text is rarely, if ever, given, and their application is but rarely explained in terms comprehensible to the reader not versed in the technical phraseology of the biologic sciences.

The concluding section on 'Applied Eugenics' represents an endeavor to translate the abstract inti the concrete, to convert words into action. It is a brief summary, alphabetically arranged, of genetic factors, of conditions and forces that fall within the purview of the immutable laws underlying selective breeding in the human family. The topics are of vital importance to every prospective husband or wife and to their unborn children. No parent can fully discharge his or her duty without taking full cognizance of the truths that are here set forth.

In discussing the practical side of eugenics, the author states:

The application of eugenic principles must always primarily be to (a) the fitness or unfitness of the individual to marry anybody, and to (b) the fitness or unfitness of a given two persons to marry each other. Many of the facts involving the application of these principles are so apparent that they can be detected and appreciated by a person of ordinary intelligence. Thus, no person would require, or at least should require, advice against marrying a confirmed epileptic, a cretin, a feeble-minded person or one afflicted with insanity, the marriage of which is, indeed, generally prohibited by law. Nor would anybody wittingly marry the victim of communicable gonorrhea or syphilis, the existence of which may, however, be either designedly or undesignedly concealed.

The topics are of vital importance to every prospective husband and wife and to their unborn children. No parent con fully discharge his or her duty without taking full cognizance of the truths that are here set forth. I therefore offer no apology for sending out a message a proper consideration of which will, I am convinced, inure to the welfare of the people now living and of coming generations.

The Practitioner's Encyclopedia of Medicine and Surgery in All Their Branches.—By J. Keogh Murphy, M.C. (Cantab.), F.R.C.S. Surgeon, Miller General Hospital for South-East London; Senior Assistant Surgeon to Paddington Green Children's Hospital. Pp. 1423; Cloth $7.00, Half Morocco, $8.00. London: Henry Frowde, Oxford University Press, 35 West 33rd St., New York City.

The general public today, more than ever before, expects the practitioner of medicine to be a walking encyclopedia of knowledge—omniscent in medicine, he is expected to be familiar with the merits of the various health resorts, the comparative virtues of patent foods, the latest scheme for social development of degenerates, the significance of an operation performed yesterday for the first time by some distinguished specialist. According to the lay mind all these and more are expected in the ordinary compass of his attainment.

When we consider the enormous advances in medicine and allied sciences during the past decade and take into consideration the great and consequent changes in medical practice, it would appear that every practitioner should have ready access to information which has become indispensable. The vast increase in medical literature makes it impossible for the general practitioner to be thoroughly acquainted with the latest advances on every subject or even to find sufficient time to consult even a small portion of such literature.

A compact practical encyclopedia of medicine in all its aspects has, therefore, become a necessity. If the Medical man is to keep abreast of the latest advances in medical learning, an encyclopedia of such size and shape that the busy practitioner can within a single volume at ance find reliable information, simply and clearly set forth must be provided. The present volume, coming as it does, between the brief medical and surgical summaries on the one hand, and voluminous systems of medicine and surgery on the other, is well conceived, and it is surprising that in the comparatively brief compass of 1,400 pages, such a multitude of subjects have been so satisfactorily covered.

For the sake of convenience the editor has arranged the contents as follow, viz.: General Medicine, Diseases of Children, Life Insurance Problems in Practice, Clinical Pathology, Medical Legal Points in Practice, Obstetrics Gynecology, Diseases of the Eye, Diseases of the Ear, Diseases of the Nose, Throat and Larynx; Diseases of the Skin, and the work closes with a section, describing "special forms of treatment."

The editor has very wisely selected as his co-workers for the different sections experts and specialists in their own subjects, who contribute articles, conveying the very latest information in most succinct, definite and trustworthy manner. The whole text matter of the encyclopedia is arranged under sections familiar to the practitioner, so that he may with ease, refer to its pages in the cases of medical, surgical and other difficulties, whilst the index provides the fullest possibilities for cross reference. For the physician in the smaller towns and rural districts, this book will prove an especial boon and will in part compensate him for the lack of broadening and stimulating influence of the general and special medical centers and societies, and he can consult this work when ready access to medical libraries and current medical literature is beyond him. This book will serve as an actual working tool in the hands of such a practitioner. This work is a book for the physician's desk rather than to repose on the top shelf of his bookcase, and it will prove invaluable in the hands of any practitioner, who is thrown upon his own resources, and who turns to it to keep abreast with the latest land marks in medical progress.

Tuberculin Treatment.—By Clive Riviere, M.D., F.R.C.P., Physician to East London Hospital for Children, Etc., and Egbert Morland, M.B., B.Sc., Visiting Physician to the English Sanatorium, Arosa, Switzerland. Second Edition. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton. 1913. (Through the American Branch of the Oxford University Press, New York.) Pp. xvi-247. Price $2.00.

The appearance of a second edition of this small work within so short a period of time indicates its popularity with the profession. This appreciation on the part of the profession is primarily due to the care with which the text matter was originally prepared, and also to the fact that its authors are specialists on diseases of the chest, and whose clinical experience in the use of tuberculin as a diagnostic agent is very great. In this new edition, the authors forcibly emphasize the dangers of ill-considered general reactions, and express themselves very conservatively concerning the production of focal reaction in pulmonary cases.

The demand on the part of the public for the suppression of Tuberculosis has suggested to the authors the need for emphasizing the study of all measures which would aid in the early recognition of this disease, and in this edition the authors attempt to supply the essential element of Diagnosis, particularly in early pulmonary Tuberculosis of adults and in Tuberculosis of the Thoracic glands, and Hilus Tuberculosis in children, in both of which early Diagnosis may save both the individual and the community from danger of open lung diseases, through which germ is spread.

The skill required for the early Diagncsis of Tuberculosis is, unfortunately, difficult and laborious to acquire, and no short cut to it ever can exist—the path of Diagnosis and Experience must be duly trod. The way can be greatly smoothed by careful piecing together the scattered stones of knowledge, over which the journey lies. This little book will serve as a guiding mile post along this troublesome road.

Among new preparations, the authors' explicit merits of the albumos free tuberculin due originally to Prof. Cock, but worked out by Jockman and Freymuth. The authors have done their work well. They have covered the subject from the four corners of the earth, extracting and remodeling the views of the best authorities on the subject the world over, among whom we are pleased to note the names of many American authors. It is a very safe book, and shows a distinct evidence of having been written as a general guide to the general practitioner over those whose careful study of the methods enunciated will help to arrive at a correct diagnosis in many difficult, trying, and troublesome cases.

Diseases of the Nervous System for the General Practitioner and Student.—By Alfred Gordon, A.M., M.D., (Paris), Late Associate in Nervous and Mental Diseases, Jefferson Medical College; Late Examiner of the Insane, Philadelphia General Hospital; Neurologist to Mount Sinai Hospital, to Northwestern General Hospital and to the Douglas Memorial Hospital; Member of the American Neurological Association; Fellow of the College of Physicians of Philadelphia; Corresponding Member of Societe Medico-Psychologique Paris, France; Member of the American Institute of Criminal Law and Criminology, Etc. Second edition, revised and enlarged with one hundred and sixty-nine illustrations. Philadelphia; P. Blakiston's Son & Co., 1012 Walnut Street; 1913. Price $4.00.

Prof. Gordon has given the medical profession a very interesting and most valuable plain and practical account of diseases of the nervous system. The book is now in its second edition and has been most thoroughly revised and enlarged to meet every requirement of the present time. The new facts which have developed since the first edition, the author describes in a concise, but at the same time, in a complete manner. Each chapter, almost without exception, has been enlarged, and among the number of additions the following are the most important ones: Fracture of the Skull; Concussion of the Brain; Lumbar Puncture; Cerebro-spinal Fluid; Wasserman Reaction; Radiculatis; and psychoanalysis.

Dr. Gordon believes a knowledge of pathology to be a sine qua non to the thorough understanding of nervous diseases from a practical standpoint, and endeavors to present only the most essential pathological changes for a thorough understanding of the various clinical manifestations. In discussing the symptomatology of a disorder, the direct relations between certain phenomena and the pathological changes are given so that the reader may have a more intelligent idea of the morbid symptoms. The author discusses from a differential viewpoint each form of functional or organic nervous disease.

The course of diseases, their mode of termination, their prognosis, and the etiology have been given due and full consideration. Considerable space has been devoted to treatment, where only the most useful and best known devices, appliances, operations and drugs are described. Medications that are uncertain as to their therapeutic value are entirely omitted, else only slightly mentioned.

A valuable chapter on the method of examination of patients precedes a description of diseases of the nervous system. In it are indicated what phenomena are considered normal or abnormal. The author describes the motor, sensory and trophic phenomena, as well as the reflexes, the state of sphincters and electrical contractility of muscles and nerves.

Finally a chapter on the Normal Anatomy of Brain and Cord, also Malformations of the Nervous System are described.

On the whole the author has presented a most practical book, not only for the average physician, but also for the neurologist, the teacher, and the advanced student. The work is most admirably arranged; affording a ready reference to the busy practitioner, and the medical student, as well as comprehensive diagnosis and treatment for practical daily work.

Stammering and Cognate Defects of Speech. by C. S. Bluemel. Volume 1. The Psychology of Stammering. Volume 11. Contemporaneous Systems of Treating Stammering: Their Possibilities and Limitations. Two volumes of about 275 pages each, handsomely bound in cloth; price $5.00, for the two volumes. New York, G. E. Stechert & Co.; London, Leipzig, Paris.

The first volume deals mainly with the psychology of stammering. The theory of causality that the author has arrived at affords what appears to be a satisfactory explanation of the various paradoxes mentioned. This theory has been developed in large part as a result of introspective evidence. We quote some of the assertions of the author:

"The stammerer can often speak when left alone."

"The stammerer is unusually fluent when speaking in concert with other people."

"The stammerer can usually sing without difficulty."

"The stammerer can usually repeat a word that he has eventually stammered out."

"That words ending in a consonant never give difficulty."

"Consonants followed by short vowels are more difficult for a stammerer than consonants followed by long vowels."

"Stammering is rarely acquired after the fifteenth year."

Asphasia and other conditions are included and an allusion is made to organic nervous conditions. Defects of speech which are a very serious handicap both socially and economically, are very satisfactorily covered. Mental types and mental images, and voluntary speech are also explained by the author.

In volume 2 the author reviews, and criticises the systems at present employed in treating stammering in Europe and America. In fact, the author includes in this volume a retrospect of all known systems applicable to the treatment of stammering, representing the principal methods used in alleviating this condition in the United States, Canada, Great Britian, France, Switzerland, Germany, Belgium, Holland, Denmark, Scandinavia, Russia, and Austria. The systems are, therefore, thoroughly representive of those employed in the civilized world, These systems, while referred to, have not been given for their sovereign merit. Indeed, many of the systems according to the author, are entirely devoid of merit, and are recorded only because they are the gold bricks which are daily sold to stammers by so-called "speech specialists."

A glossary has been appended to the second volume, which is sufficiently comprehensive to render the book available to the youthful stammerer. Dr. Bluemel is to be complimented on his broadness of view in giving to his readers the benefit of matter which they would otherwise have to obtain under great difficulties, while on the other hand, his criticisms of methods alluded to are of value to the readers in forming an opinion.

PEDIATRICS

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EDITORIAL

A NEW BICHLORIDE OF MERCURY TABLET

The recent wave of accidental (?) poisoning from the deadly Bichloride of Mercury tablet seems to have swept the entire country and extended, almost, to the four corners of the earth. The increase in the use of mercury bichloride as a disinfectant probably accounts for the recent increase in the number of suicides in which this agent was used. Many suggestions have been offered as a solution of the problem—enterprising firms have offered tablets of peculiar shape and color as well as distinctive containers, as a safeguard against accidents, none of which seems to meet the requirements—the safeguarding of human life.

A wide a wake western pharmaceutical house has brought out a very unique substitute for the bichloride tablet, which consists of a piece of blotting paper 2 1-2 inches long by 1 1-2 inches wide which is impregnated with the bichloride of mercury. In this shape, accidents are practically safe guarded, since no one could take this piece of paper through error, as it would be necessary to dissolve the poison from the paper and swallow it—which could be readily done by a person with a suicidal intent, who could then gulp it down with demoniacal glee.

To my mind there is only one absolutely safe and legitimate way to market bichloride of mercury tablets without putting a hardship on layman or druggists.

I was a member of the Commission from New York City that appeared before the Codes Committee at Albany, when the bichloride of mercury bill was before the Senate. I stated then that any legislation which would compel a poor woman who needed bichloride of mercury for douching, to have to pay a physician one or two dollars for a prescription, would be a distinct hardship. Since that time I have investigated the question from many viewpoints and as a result of much thought and study given the subject, I have arrived at—what to my mind is—a practical, simple and easy solution of the question.

As a result of my investigations and research, I propose federal and state legislation to regulate the sale of bichloride of mercury. 1st. Limit the sale of the poison in its present form, only to physicians for their personal use and to hospitals for institutional purposes; 2nd, when sold to the laity bichloride of mercury shall be put up in a tablet form of 7 3-10 grains of bichloride of mercury, ammonium chloride 7 7-10 grains and 1 1-4 grains antimonii et potassii tartras—tartar emetic so compounded that the tartar emetic will promptly exert its full emetic action on reaching the stomach before the corrosive sublimate can begin to exert its violent, irritant and deeply caustic action. This combination will in no wise hinder the bacteriocidal, germicidal, disinfectant or antiseptic action of the bichloride of mercury, but on the other hand the tartar emetic will have a synergistic action.

The physiological action of tartar emetic produces prolonged nausea, violent and repeated vomiting and retching completely evacuating the stomach contents. So no matter whether such a tablet is taken accidentally or with suicidal intent the result will be the same in all cases, prompt and complete evacuation of the stomach contents, with the result of saving human life.

At the present time there is insufficient legislation to reasonably safe guard the public in connection with the sale of corrosive sublimate—bichloride of mercury. No less than thirty-eight states have enactments purporting to regulate the sale of the poison, none of which fill the bill. Several bills have been introduced into Congress and into the various state legislatures, and the subject has been considered by many boards of health, but as yet no positive safe guard has been offered the public.

I respectfully invite the co-operation of physicians, publicists, philanthropists, statesmen, all federal and state officials and the public at large to assist in bringing about the necessary legislation which will once and for all, place the vending of the deadly bichloride of mercury tablet on a basis which will positively safeguard its general use by the laity. Medical journals and the daily, secular and religious press are also invited to take up the matter and urge the needed legislation to bring about the safeguarding of human life.

HEAT AND INFANT MORTALITY

That meteorological conditions have a disastrous effect upon the infant is too obvious to need argument. When hot weather sets in infant mortality goes up pari passu. However, although there is no getting away from the fact that hot weather exerts a remarkably prejudicial influence on infantile mortality and morbidity, there is a difference of opinion as to how a high temperature brings this about. Until the discoveries and developments in bacteriology and in the etiology of infectious diseases, it was generally believed that it was the direct effects of heat, that killed infants by wholesale. When the knowledge had been gained the opinion among members of the medical profession became prevalent that heat stood only in causal relation to summer deaths of young children, and heat was regarded as an agent calling other harmful influences into action. Now according to Dr. I. W. Schereschewsky, Surgeon U. S. Public Service, the pendulum of opinion is again swinging in the direction of the old time view that heat excites its maleficent effects on infants directly. It appears that recent observations in Germany by Finkelstein, Liefman and Lindenmann, Klose, Kathe and others go to show that this view is correct and that once more we must revise our opinions on the subject.

The conclusions come to by Dr. Scherescheysky are as follows: (1) The action of heat as a direct cause of the summer mortality of infants has been greatly underestimated in the past 25 years. In the future much more weight should be given to its influence. (2) The lethal action of heat is a function, not so much of the maximum and mean temperatures of the external air as of the indoor temperatures, which, in the late summer may continue to be high, in spite of remissions in the temperature of the external air. (3) The action of dirty and stale milk in causing the death of infants has been given a significance which has overshadowed other factors of equal or greater importance. (4) There is evidence to show that a certain proportion of infant deaths are due to specific infections, in the dissemination of which contact infection and flies doubtless play a part. (5) As a result, future activities for the prevention of infant mortality must concentrate themselves to a greater extent on the question of housing, especially on the conditions productive of high indoor temperatures, such as overcrowded, narrow streets, and the absence of thorough ventilation. (6)

Poor housing conditions can be partially neutralized by the proper care of babies in the summer. The general public should be educated as to the importance of high indoor temperature in causing the death of infants, and especially as to measures which prevent babies from suffering from heat. (7) Breast feeding must still be regarded as a most, if not the most important preventive of the summer death of infants.

Perhaps, the direct effects of heat are somewhat unduly minimized, but on the other hand, Dr. Schereschewsky seems inclined to exaggerate the ill effects of heat as a direct factor in the causation of infant mortality. The question of summer infant mortality is mostly a question of feeding, although excessive indoor heat militates considerably against the health of an infant. Thorough ventilation is therefore an important matter in considering the best means of conserving the health of babies. Breast feeding should not be regarded as a most important preventive of the summer death of infants, but as decidedly and absolutely the most important preventive. If breast feeding were universal as it ought to be, the death rate of infants in the summer time would drop with surprising rapidity.

THE QUESTION OF PASTEURIZED MILK

It is agreed on all hands, that the proper food for infants is mother's milk, but unfortunately among all classes of society there appears to be a growing distaste on the part of mothers to nurse their infants. Any excuse, with a very large number of women, is good enough to evade this maternal duty and the consequence is that artificial feeding flourishes exceedingly and is moreover on the increase. In lieu of human milk, the milk of the cow is the best available substitute, but how should the milk be given? The authorities aver that it must not be given or infected with the germs of any disease and cannot be procured except at considerable expense both clean and comparatively sterile. Thus the custom of sterilization and then of pasteurization came into vogue. According to the enthusiastic upholders of pasteurization, this method solved the problem, for while it did not destroy as sterilization destroyed certain essential nutritive properties of the milk, it did kill the germ of tuberculosis, the one most to be feared so far as infants were concerned. However there has always been a large section of the medical profession, especially in Great Britian, somewhat sceptical concerning the superlative merits claimed for the pasteurization method. For instance, it is contended that pasteurization as carried out in the ordinary manner, that is heating the milk to a temperature of 150 or 160 degrees F. for 20 or 30 minutes although it does not bring about important changes in the composition of the milk, yet only partially destroys bacteria, chiefly those of the lactic and coli group.

In Great Britain recently, discussion has again become acute with regard to sterilization, boiling and pasteurization of milk. Some prominent medical men assert that none of these methods are effective, this is to say that infants fed on cow's milk so treated do not, as a rule, thrive but are weak, ill-nourished, and prone to tuberculosis. They either take the stand that the contraction of bovine tuberculosis is a negligible quantity, or that it is better to run the risk of contracting this disease than on bringing up infants on a food that does not nourish them properly.

Per contra, there are those who hold that infants flourish well on pasteurized and even on cooked and sterilized milk. But when assuming that bovine tuberculosis is a real menace from which infants should be sedulously guarded, the question arises, does pasteurized milk provide this safeguard? It certainly does not, if pasteurization only partially destroys certain disease germs and it would be instructive and valuable, to have cleared up once and for all time, the exact effect on the germs of tuberculosis excited by pasteurization.

The main argument that can be adduced against pasteurization is that a general belief in its good efffects, which has been fostered by many members of the medical profession, prevails among members of the community bringing about a feeling of security, which is a false security, if pasteurization does not do what it is claimed to do. Mothers are too ready to pin their faith on the nutritive and safe properties of pasteurized cow's milk, and to neglect to feed their infants at the breast. It must be borne in mind that the differences between sterilized or pasteurized cow's milk are relatively as nothing compared with those obtained between cow's milk and human milk. For the young of a given species there is an undoubted superiority in milk derived from animals of that species over milk obtained from species whether sterilized or not. Therefore, the wisest course would seem to be only to recommend the use of pasteurized cow's milk when human milk cannot be procured, and to strongly advise a mother to nurse her own children except when this is absolutely contra-indicated.

THE ACUTE DYSPEPSIA OF INFANCY

Acute indigestion during the first few months of life is an affection, which, as a rule, fails to receive the full need of attention for which it calls. Its symptoms are regarded as of little or no importance; it is suggested that the child's food "is not agreeing with it," and the mother is reminded that in infants, trifling derangements often induce alarming manifestations. This reassuring attitude, however, is often productive of grave harm to the invalid and there can be no doubt that the mortality from gastro-enteritis would largely diminish if more attention were paid to the first signs of abnormality in the performance of the digestive functions. Of these signs a change in the color of the motions usually appears at the onset; the green color appears to be due simply to biliverdin, as the bacteria described by Lesage as causing it, have eluded other observers. At the same time there is no doubt excessive microbic action, for the normal acidity of the feces is lost and they may become quite strongly alkaline. Post-mortem the green color is rarely seen as high up as the duodenum, and Heubner concludes that the affection begins as a chemical derangement of the contents of the jejunum and upper part of the ileum, a view which is supported by the fact that gastric symptoms do not appear till comparatively late in the disease. The next symptom, is, in fact an increase in the number and a diminution in the size of the green stools, and the presence of volatile fatty acids, which render them at the same time extremely putrid or malodorous and most irritating to the skin. Peristalsis becomes more active and is both irregular and painful, hence the child becomes restless and wakeful. The stomach is next affected, vomiting supervening with loss of appetite and often of weight, which in any case remains at best stationary. Then the stools become watery, the temperature rises, and less remedial measures have been adopted, gastro-enteritis supervenes.

The radical treatment of this affection is rendered difficult by the fact that it commences in the most inaccessible part of the alimentary tract, namely, the small intestine. The first necessity as heuber well says, is to wash out the stomach, a procedure which although it has been extensively employed abroad in the treatment of infantile dyspepsia since Epstein introduced it several years ago, seems to have found but scant favor. It is easily done by means of a soft catheter, the child lying on its left side, on the nurse's knee, facing the operator and having the hips raised three or four inches above the level of the head. One or two ounces of 0.02 per cent. solution of resorcin or 0.5 per cent. solution of boracic acid are poured in through the funnel, the quantity varying with the size of the patient. The funnel is then depressed and washing continued till the fluid comes away clear; the sitting is concluded by the introduction of one-half of one drachm of caster oil through the tube. Should lavage be deemed unnecessary or inadvisable, Heubner recommends the administration of a powder containing one-half to two-thirds grain calomel and 15 grains magnesium carbonate every three hours until the characteristic greenish-gray stools begin to appear; one dose usually suffices; more than two or three are never required. The alimentary canal having thus been cleared out the next step is to regulate the diet, by striking out the food which is suspected to have been the cause of the symptoms. It is best, if possible, to rely entirely upon sterilized milk, but if this was the diet before the attack some farinaceous food will now be indicated. Any of the better class of infant's foods may be given, but not boiled with the milk, which forms a mixture difficult of digestion. Heubner's plan is to take a tea to a tablespoonful of food and to shake it up with cold water, subsequently boiling with a pint of water for a quarter of an hour. In very bad cases rice meal or arrowroot should be substituted for the prepared food, a tablespoonful or so of milk sugar being also added. Whatever form of nourishment is given should be carefully sterilized, to prevent the growth of the milk bacteria in it. This diet produces brown, rather solid, dejections; after it has been continued for three days one may assume that the intestinal bacteria have been starved out and that the time has come for cautiously recommencing with sterilized milk, which should be done by gradually stirring an increasing quantity into the gruel. Intestinal antiseptics are rarely of use, though Soltmann recommends resorcin and Widowitz speaks very highly of naphthalene; if necessary, however, the acidity of the motions should be restored by the use of very dilute lactic acid (Lesage.)

Acute dyspepsia is more difficult of treatment when it occurs in breast babies under the age of three months, before which time farinaceous food is badly borne, either leaving the intestine unchanged or increasing the dyspepsia. A gruel made of ground arrowroot, maize or rice is, perhaps, less intolerable than other foods, but in many cases one is reduced to feeding the infant, for a day at least on thin veal broth or egg water (the white of one egg with some milk sugar to two pints of boiled water). If this diet is properly assimilated it may be continued for a couple of days, the child then being put upon a mixture of a pint of cow's milk with two pints of five per cent. solution of milk sugar. In some instances peptonized or albumose milk may be given with advantage. Such is the treatment of a condition which, though of obscure origin, presents itself as a definite clinical entity, and although increasing knowledge may improve our insight into its pathology, it is hardly likely to subvert the rational basis of remedial measures based on experiences and common sense.

PEDIATRICS

ORIGINAL ARTICLES

THE PREVENTION OF TUBERCULOSIS IN CHILDREN

BY HANS KARFUNKLE, M.D.
Berlin, Germany

"The Child is the Father of the Man."

I have observed in several thousands of applications of a certain kind of avirulent saprophytic non-tubercle-bacilli the fact, that without a single exception, there resulted always a marked action upon the slightest tuberculous focus. Therefore there cannot be any doubt that my bacilli possess a specific affinity to tuberculous tissue. But this would be only of scientific, not practical value, unless with this affinity other, i.e., immunizing and healing efficiencies were connected.

The closer relations of my bacilli to tuberculosis, particularly the theory, having been the object of a previous paper, the purpose of the present one is to explain their action upon tuberculous children. I quoted from this paper, that my bacilli are saprophytes, of the group of the mucor bacilli, and are absolutely avirulent and harmless: the injections never are followed by abscesses or infiltrates, but by slight local focal and general reaction. The bacilli having a marked affinity to tuberculous tissue, the dosage is to be directed according to the respective tuberculous process: the greater or more active the process, the smaller the dose from 2.0 mg in inactive to 0.05 mg in active ones, in normal salt solution.

While cures of tuberculosis in adults only can be made, with the aid of my bacilli, in the length of time—even though always quicker and more certain than by any other treatment, considering the respective stages of the disease—contrary to this all cures in children of every age are rather short.

No matter if we are dealing with children in whom tuberculosis is only suspected by some clinical signs, by anemia, loss of appetite and weight, or if there is evidence of tuberculosis—practically without exception, all such children turn their development to an obvious improvement, seen by sudden rise of all signs for this improvement, the children—again without exception—demand food almost without satisfaction, they eat more during the meals and ask for food between the meals. The anemia subsides—without exception, and the most important sign—the tuberculus disease and condition subsides in from 5 to 10 weeks. While the obviously tuberculous children sometimes need a second, seldom, a third injection, only a single injection is sufficient in not obviously tuberculous children, as in cases of anemia, glands and tuberculous conditions. The treatment in lymphatic infected children or such with slight tuberculous processes inspite severe symptoms being very simple, consisting in one or two injections, in advanced cases it is different and to be performed according to certain rules, as closer explained in my previous papers, the treatment becoming similar and about the same as in adults.

I have injected children who lived in dangerous environment of severe tuberculous parents and relatives and, so far, I have never seen these children develop a tuberculous disease, but they are thriving and growing under the above given conditions, and again I add that this occurred without exception, in all injected children.

Pottinger says: "From experiments of many investigators, especially of Roemer, we are led to assume that the infections of early childhood are producing an immunity and building up a protection within the host, which is probably saving the race from destruction from tuberculosis. From this we cannot argue that infection in early childhood is desirable, but rather that, if it occurs, we should see that it is properly treated so that we turn it to the patient's advantage."

So far experiments on immunization of animals against tuberculosis have been carried on with living bacilli, this was done only with such as are related to the tubercle bacilli. These experiments giving the fact that more or less successful establishment of immunity by infection with living bacilli in animals is possible, so far no safe immunity has been established whereby this may be carried out to any extent on human beings. Thereby it is well to bear in mind that, in the use of living bacilli, the investigators only claim preventing efficiencies, not at least in a very restricted sense, healing properties on already existing processes—and the immunizing properties only in animals.

I am bringing a new element into the discussion: As at the present time safe immunization in man is not practicable, yet we are able to prevent the outbreak of tuberculous disease, after infection has taken place, through my heterogenic bacilli, because they possess the properties to destroy every latent focus to the extent that it is prevented from delivering damaging toxic substances into the tissues and liquors.

Even if there is not obvious tuberculosis, but only the well known signs of a repressed development, we may assume that an amount of poison, which is not sufficient to produce tuberculosis, continually, or in time damages the tissues of the growing organism of the child and keeps it from natural development, the very outbreak of tuberculous disease may be prevented by the natural power of the cells, because the growing cells continually produced anew have more power of natural resistance. So, we often see a child of weak constitution, probably due to a latent tuberculous infection and to bring this focus to the period when the child reaches maturity or adult life and overcome the infection then—or not, in this case developing tuberculosis.

Many attempts, to the present time, to prevent tuberculosis have been to find remedies to prevent the infection—which have been futile so far—with reference to man. Neither specific substances being dead or living, nor putting the children into fresh air have been sufficient for this end, in view of the practically universal presence of the tubercle bacilli.

But scientific work has shed light on the early discovery of the presence of the tubercle bacilli in any organisms in the time where the very tuberculosis has not yet been developed, in the time of beginning of the struggle of the organism against its foe. And I am satisfied, that, before damage is done, I am able to annihilate the foe and his arms at once.

My experience with injected children extending only over a period of one and a half years, I must admit that the child's freedom from further attacks is not warranted. And even if some symptoms, e.g. anemia, peevishness, etc., would sooner or later return, indicating that the germ be not yet eliminated, or due to another infection, another injection would bring back the same success. There is no objection in other diseases to repeat any treatment when needed, and an arising necessity of repeating this treatment never should lead to reject the whole method. But so far, I seldom saw the necessity to repeat—only in more advanced cases of tuberculosis, nor so far in the lymphatic or anemic, i.e. suspect tuberculous children. My observations embrace a period of only $1\frac{1}{2}$ years, and so far all children are improving very well. Experience of many practitioners shows that the child, the older the better, resists to that disease or condition, and the younger children being in the greatest danger of life, we can state with experienced therapeutists: when we succeed to bring the children over the first period of life, over the first troubles of tuberculosis or tuberculous infection, we have gained very much. And I claim, that we can, with my method, and as experience shows in older children, still more.

Whether the efficiency of my bacilli will offer a perpetual immunity, so desirable, which will remain, I cannot say. For the present, I consider it most useful in that we are able to fight the foe successfully. And furthermore, I consider it wrong to prevent such a victory, even if for some cases a preliminary one in order to maintain a two-edged immunity—because we never are able to know, when this condition will become a danger. But not even an arising defenseless against further infections is necessary to be assumed, because the focus, in many cases, even if healed, may maintain the possibility of delivering immunizing substances, if irritated by a later infection. In cases of total elimination of the focus there may result a defenseless, but in view of the extraordinarily strengthening power of the bacilli a natural defense, unsusceptibility is always existing, and after weakening influences, by other diseases, followed by obviously lessened strength, a new inoculation will be of no harm.

And if the fear of loss of immunity does not prevent our attempts for healing each tuberculous adult by all possible means, if we consider as the highest extremity to heal every active focus, why should we not do the same in children, who are submitted to the infection in youth and spreading it in later life, the very causes of tuberculosis of the adults? And if we fight the tuberculosis of childhood, the tuberculosis of the adult life will become rather seldom. Theoretically, with the aid of my bacilli also a prevention of tuberculous infection may be possible, when we combine the experience obtained from their efficiency with the immunizing attempts of the present time.

"Dead tubercle bacilli will produce histological tubercles the same as living bacilli." (Pottenger). The histological construction of the papula of tuberculin-vaccination has been examined by Daele and Ziegler. Both found it very similar to the construction of the genuine tubercle nods, very giant cells having been observed. Only the necrotic centre of course was lacking. It appears proved that toxin when brought in a damaged tissue is sufficient to stimulate the cells to build up histological tubercle nods.

In human beings, when artificially infected with avirulent tubercle bacilli, my heterogenic bacilli produced a strong Lysin formation. For instance I saw, always, abscesses on the places, where avirulent tubercle bacilli previously were injected, no matter where the injection of my bacilli had taken place. I claim, in agreement with this observation, that my bacilli, by their distinct affinity to all tuberculous tissue, are able to destroy also the tissue produced by dead bacilli.

If we want to produce under all circumstances a prevention against tuberculous infection, in not yet infected man, the best way would certainly be to inject once or twice with a certain amount of dead human bacilli and, after a certain time, to inject my bacilli. I hold this way practicable only in children, who are subjected to the daily danger of infection in case of unavoidable neighbourhood of tuberculous persons.

In other cases the safe prevention against the development of the infection into excellent improvement and the obvious strengthening of the growing cells may be sufficient--saving of millions of lives.

The practical proposition for prevention of tuberculosis from the above given statement is as follows:

Whether my bacilli are able to produce an immunity or protection against tuberculosis in human beings who are not yet infected by the tubercle bacilli, I cannot say,

But after such an infection has taken place, they certainly will give this prevention.

Because we have in the von Pirquet test a doubtless proof of the presence of the tuberculous infection, we are able to recognize every infected child.

Because practical experience, substantiated by post mortem examinations, shows that from the sixth year practically every child is infected by the tubercle bacilli, even though, only a certain percentage is clinically tuberculous, there is no objection to produce or amplify in every child from six to fifteen years the immunity or protection against the tuberculous disease through injection of my bacilli after the von Pirquet test has been positive.

The anemic and suspected tuberculous children will have all desirable improvement.

The well children very often harbor a latent focus the development of which in obvious tuberculous disease in every moment of life being possible and unfortunately occurring very often, causing the appalling number of deaths of tuberculosis. There is all certainty that these latent focuses are destroyed at once.

Because a child until the first three months of life, when infected or tuberculous never is seen to overcome the disease or infection, and from three to six months very seldom, every child of this age must be injected after any disease which is able to smooth the passage for the tubercle bacilli, especially after pneumonia, as the frequentest disease of the early age.

In other cases I would not suggest the inoculation of my bacilli from the early age to two years, before the von Pirquet test has established the evidence of tuberculous infection, because there is not yet the evidence or possibility of protection, before the tubercle bacilli have entered into the organism.

But I suggest to test the well children every year with the von Pirquet test and to apply the bacilli soon after positive reaction; previously only after any disposing or weakening disease as selfunderstood after-treatment.

It is to bear in mind that my method of prevention of tuberculosis hitherto only is able to prevent this disease after infection (which is not the same as disease) has taken place. And as there is no remedy or method to prevent the infection at all, my bacilli up to the present time are representing the best means to prevent the outbreak of tuberculosis because of their properties to destroy tuberculous focusses of any kind.

Bandelier and Roepke say: The only way of saving the tuberculous children from developing at once or later in life serious tuberculosis or to prevent an infection to become a disease is the early application of tuberculin. Herein almost unanimous with all other French, German and American authors, they agree in the great difficulty in performing this way in view of resistance of the local school authorities and parents—not even they hold this way safe in most cases of tuberculosis in children i.e., only for those who are free from tuberculosis of the lungs; the younger the children are, the less are the chances for cure. And if I perform the safe and proper development of all children with the aid most of a single injection with my bacilli, and in practically all injected children, then there cannot be a doubt whether this little but efficacious treatment shall be preferred to a large number of injections of tuberculin with their doubtful results in most cases.

Hereto, I append some recent expressions from prominent authors who agree with my views concerning the origin of tuberculosis.

Citation.

Interstate Medical Journal, Vol. XXI. April, 1914.
Lapham:

"(In no other way can we explain) the practically universal infection of all children by the time they reach maturity." P. 465: "Should we ever dream of even attempting to prevent this infection?"

"Since practically all children are infected by tubercle bacilli, the tuberculosis of adults must be due to secondary infections or to the delayed manifestations of a process existing from childhood or to a combination of both. It is probable that secondary infection would be much more likely to cause tuberculosis when grafting on to an existing process, and might otherwise, unless favored by existing lesions, be as harmless as primary infections usually are."

P. 466: "It is from the ranks of the well children that the tuberculous adults of the future are being recruited—the well ones go on, and later on, in adult life, manifest precesses which have been for years."

P. 467: "Far from being a proof of safety, good health in children may be the very cloak behind which tuberculous processes are enabled to extend until it is too late."

"Since it is impossible to avoid infections, all we can do is carefully to watch and be certain that they are causing no harm."

"Some day it will be regarded as an unpardonable crime to permit tuberculous processes to develop until they become dangerous."

"McSweeney says that ten million cases are dying from tuberculosis, and if we estimate the expense of each case at one hundred dollars only, we have a loss of a billion dollars. One year's losses from tuberculosis would build three Panama Canals, and yet we make no effort to get at the facts in the case."
II Crookshank S. 381.

"The chronic phthisis of adult life is in majority of cases, due to a recrudescence of an infection contracted in earlier days."

P. 382: "So did the later Prof. Poncet seek to instill the notion that many of the banal inflammations and scleroses of adult life are connected, etiologically, with earlier invasion by Koch's bacilli "

"The only true means of protecting the race lies in the production of a sufficient immunity, general or specific, in childhood."

"The care of the child is the root-problem in dealing with tuberculosis."

III Van Peit, P. 433: "In that the forms of tuberculosis, which appear in the first two or three years of life, are predominantly fatal, they should certainly be prevented wherever possible."

Bandelier and Roepke say, P. 135: The mortality on tuberculosis of the school-age has not remarkably changed in the last decennium. This can only be changed if we hold every tuberculous focus in the body of the child as a danger. And occult glands or focusses in the lungs even are a serious danger to the organism, the possibilities even being increased in childhood that a quiescent infection of tuberculosis close to a traumatic or infectious provocative irritation will be extended and the quicker and commoner, the younger and the less resistible the children still may be, therefore, the earliest recognition of infantile tuberculosis, of the occult focus, too, is a stringent necessity. (And I add: the safe elimination, without any exception performable by my bacilli, too.)

Pottenger P. 212, says: From my discussion of infection and the period of latency in tuberculosis, the importance of treatment of the disease in childhood is self-evident—where I find a child who is peevish, irritable, shows lack of appetite, is not gaining in weight properly, does not enjoy its play, fails to have the buoyancy and vivacity that is natural for this period. I suggest a careful examination. And

Petruschky, P. 38, holds these forms of general weakness as distinct signs of tuberculous intoxication, originating from already existing tuberculous in the gland system.

Pottenger, P. 5: The weight of evidence is against it (i.e. condition of latency) being the harmless condition which has previously thought, for the evidence is now strong that most instances of clinical tuberculosis in adults are due to renewed activity in previously latent foci.

Conclusion

I injected with my bacilli in my clinic in Berlin 98 children, from 4 months to 14 years.

These children came all from the poorest class of the population and almost without exception from tuberculous surroundings and very unhygienic circumstances.

The injections were most given on demands of parents who wished a method for preventing the children from the fate of their tuberculous relatives.

Among these children, I found 39 with already severe involvements of the lungs, in very unfavorable conditions. Because parents seldom will give the permission to treat children, the dangerous condition of whom they are unable to realize; with continued injections, and, as here, with a new and unknown treatment, I was not able to treat them like adults, but I was forced to restrain in my treatment to one or two injections, in intervals of several weeks. The results were as follows:

From 39, the sum total of children of severe tuberculosis, I observed several months 29, with complete result as to the condition of the lungs and subjective symptoms 17, i.e. 58, 6 per cent.; with not complete change of the lungs but entirely change of the repressed development to best health in every regard: 12 i.e. 41, 3 per cent.; after improvement withdrawn to further observation of the remaining ten.

These children had already developed tuberculous disease. I am justified to maintain, that these good results would be much better if the children would have the opportunity of hygienic treatment and also the proper after-treatment.

Forty-two was the sum total of children in whom a tuberculous focus could not be discovered, but who reacted positive to tuberculin, the tests administered because of bad health for years, and marked repressed development, most with gland swelling. Tuberculous surroundings and heredity always present. The results were: From 33 children recovered completely 32, i.e. 96 per cent. Nine withdrawn, no observation after injection. From the ranks of such children are these recruited for whom I held the prevention as most indicated.

Furthermore I healed three cases of tuberculosis of bones, 3 of tuberculosis of bones and joints were much improved. 3 children with tuberculosis of the skin were healed and one of tuberculosis of the intestines and peritoneum. No other cases were treated. No regrets or disimprovement was observed.

As a remarkable sign of a real turn in the development of the children I add the observation that in all cases, where there were external manifestations, in Germany known by the name of skrofulous eczemas, and sometimes enormously extended ones, very soon disappeared after the injection, in 100 per cent. I hold the bacilli as the safest remedy for curing such phenomena.

DRIED MILK IN INFANT FEEDING

BY ERIC PRITCHARD, M.A., M.D., M.R.C.P.

The Ekenberg process of manufacturing dried milk consists in the partial condensation of the milk at a low temperature under reduced pressure, and its subsequent desiccation within the interior of cylinders heated to a comparatively low temperature. The milk solidifies into a crystalline mass on the surface of the cylinders which are kept in constant rotation. This mass is subsequently broken up and pulverised. This method is not employed to any large extent in this country, but it is more popular in France and in other parts of Europe. In England the process usually employed is the Just-Hatmaker. The previously concentrated milk is spread on the outer surface of rotating cylinders which are heated to a high temperature by steam (160° C.). The thin film of milk dries rapidly on the highly polished surfaces and is scraped off by knifeblades and subsequently pulverised.

A third process known as the Bevenot-de-Neveu method, consists in concentrating the milk "in vacuo" and at a low temperature, and then forcing it under pressure (250 atmospheres) through minute perforations in a metal disc into the drying chamber. The nebula of milk is then surrounded by an envelope of dry and hot air and swept across the chamber. Owing to the fine state of division of the condensed milk, and its intimate contact with dry air, the milk is almost instantaneously desiccated and falls as an extremely fine powder. The moisture thus evaporated is carried off as a cloud of steam, while the snowlike desiccated milk is rapidly swept up from the floor and packed. So finely atomised is the milk that even at comparatively low temperatures the moisture is almost instantaneously evaporated; indeed, this evaporation is so rapid that the water is removed from the coagulable ingredients such as the whey proteids, before they have time to become coagulated by the heat. Hence the possibility of reconstituting with water the coagulable substances which have been desiccated. Milk and whey can be reduced to the condition of a very dry powder containing no more than 1 per cent. of water, apparently without losing any of their natural properties, that is to say none of the enzymes or vitamines appear to be destroyed and the milk when reconstituted with water can be coagulated by rennet or heat, precipitated with acids, and soured by lactic acid ferments just as is the case with milk fresh from the cow. Moreover, when allowed to stand the cream will slowly rise as in fresh milk. These results are of immense advantage, for the chief objection raised to desiccated milks is that the heat has destroyed those subtle and vital properties supposed to be essential to nutrition.

Milks desiccated by the three processes described possess very different physical properties. Some of them possess distinctive chemical properties as well, for to certain of them chemical substances such as phosphate of sodium, saccharated lime, or glucose are added to facilitate the operations of drying and to render the finished product more readily soluble in water.

The appearance of milk dried on the surface of cylinders as in the Ekenberg or Just-Hotmaker processes is that of irregular polygonal plaques of varying dimensions and of striated structure, whereas the powder dried by the Bevenot-de-Neveu process is very much finer and more homogeneous. It is very much finer and more homogeneous. It is fairly soluble in hot, but resistant to cold water. The Bevenot-de-Neveu milk is equally soluble in hot and cold water and can be readily reconstituted by beating with a fork or special whisk.

The appearances of the cylinder-dried and the air-dried are also distinctive. The colour of Just-Hatmaker milk is biscuit yellow, that of Bevenot-de-Neveu milk of a peculiarly snow-like white. When allowed to stand the fat rises in the former as a yellow oil; in the latter, as a rich cream. The odour of the cylinder-dried milk is agreeable, and distinctly biscuity. The odour of Bevenot-de-Neveu milk is slightly tallowy, especially when it has been kept for some time. This is due to the oxidation of the fat, a result which appears to follow from the fine state of division in which the fat particles are presented to the oxygen of the air. Although this oxidation in no way affects the nutritive value of the milk it detracts from its popularity. This is unfortunate for in all other respects Bevenot-de-Neveu milk is as superior to other varieties of desiccated milk as fresh milk is to stale milk. This taste, however, is one to which most people soon become accustomed, after they have drunk the reconstituted milk for some little time.

Dried milks, whether prepared by the cylinder or the air-process, are usually sold in three qualities, firstly, as "full-fat" milk from which no cream has been extracted before drying; secondly, as "half-cream" in which part of the fat has been removed, and thirdly as desiccated milk from which all the cream has been separated. To these three varieties yet a fourth may be added, namely milk modified to the standard required, or supposed to be required, for infant feeding.

These milks vary in price in proportion to their cream content. Full-cream milk sells at about 1s. 6d. per pound, and separated milk at about 7d. When reconstituted with water and made up to their original bulk, the best dried milks cost practically the same as the best dairy milks, i.e., about 4d.—5d. a quart.

Dried milk, as Professor Porcher says, is "la vache dans le placard," that is to say, if you have dried milk you are as well off as if you kept a cow in the larder ready to be milked at any moment. Dairy milk deteriorates from the moment it is milked up till the moment of consumption; if consumed 18 hours after milking the deterioration may be extreme. Dried milk represents milk which has only deteriorated between the time of milking and desiccation. This usually is not more than four hours, and need not be more than one hour.

In infant feeding dried milk is no better adapted to the physiological requirements of infants than is ordinary cow's milk. It must be modified to the nutritional and digestive requirements of the infant in the same way that cow's milk must itself be modified. Many are of the opinion that infants can be brought up successfully on whole milk which has not been modified in any way. It is true some infants will muddle through without any serious disasters even on diets so little suited to their needs as the unaltered milk of the cow. But the best results are not obtained in this way. An infant can easily be taught to digest cow's milk, even in the undiluted or in the non-citrated condition, but because a food is easily digested it does not follow that the proportions of its main constutuents are well adapted to the physicological requirements of the consumer. Cow's milk must be modified by dilution and fortified with fat and sugar, or treated in some other way to bring it up to the approximate standard of breast-milk. Dried milk must be modified in the same way.

If a good variety of dried milk is diluted with water in the proportion of one part of the powder to 8 parts of water, the resulting mixture is, or should be, of the same percentage composition as the undiluted milk from which it was originally prepared. Assuming the percentage composition of breast-milk to be: 1.5 per cent. proteins, 6.5 per cent. carbohydrates, and 3.5 per cent. fat, a mixture of this percentage composition (Formula I) can be prepared by combining two tablespoonfuls of "full-cream" dried milk, six teaspoonfuls of sugar, one ounce of thick cream (46 per cent. fat), in one pint of water. Such a mixture, however, differs from breast-milk. In breast-milk, the total 1.5 per cent. of protein is made up of .5 per cent. caseinogen and 1 per cent. whey proteins, whereas in cow's milk the proportion is approximately 3 per cent. caseinogen to 1 per cent. of whey proteins. In ordinary disiccated milks the deficiency of whey proteins is even more accentuated. Some authorities attach great importance to whey proteins in infant-feeding, and attribute many of the failures to rear infants successfully on cow's milk, or dried milks, to this defect.

If, therefore, dried milk is to be so modified as to correspond to breast-milk in respect of its content in whey proteins, these whey proteins must be added independently. The Bevenot-de-Neveu process of desiccation permits of the manufacture of a whey powder which, when reconstituted with water, almost exactly reproduces the original whey from which it was prepared. Dried whey powder of this kind is sold under the name of Sweet Whey or Sec-Wa. A milk with a percentage composition the same as human milk can be prepared thus (Formula II): Full-cream dried milk, 3 teaspoonfuls; Sec-Wa, 2½ tablespoonfuls; sugar, 2 teaspoonfuls; thick cream (46 per cent.), 1 oz.; and water to 1 pint. This is a valuable substitute for breast milk, but somewhat expensive owing to the large quantity of dried whey powder and cream.

But ensuring the exact balance between the caseinogen and whey proteins, is necessary only in the young or delicate infants who have not acquired the powder of digesting caseinogen. For strong, healthy infants, accustomed to ordinary cow's milk, or gradually habituated to larger quantities of caseinogen by a graduated course of feeding, the following formula is successful (Formula III.): Proteins 2.5 per cent. (caseinogen chiefly), sugar 6.5 per cent., fat 3.5 per cent. This is prepared by combining 1 oz. of "full-cream" dried milk, ½ oz. sugar, 1½ oz. thick cream (46 per cent.), and water to the pint. The transition from Formula II. to Formula III. should be slowly and carefully conducted by the gradual substitution of the sugar and the full-cream dried milk for the whey powder.

For purpose of economy dried separated milk may be used, supplementary fat and a small quantity of sugar being added. The best fat to add is cream, but this is expensive; any other fat will answer. Perhaps a combination of several fats is even better than one single variety of oil, which may not contain the different fatty acids in the required proportions.

PERCENTAGE COMPOSITION

ARTICLE	Proteins. Caseinogen.	Whey Proteins	Fat	Sugar.	Approximate Caloric Value per Gramme.	Ounce.
Dried Milk—					Calories	Calories
Full cream	24.50	1.94	38.92	28.00	5	146
Half cream	30.58	2.42	39.70	15.10	4	119
Separated	31.40	2.49	55.00	1.00	4	104
Whey powder		14.25	74.50	0.27	4	102
Thick cream (46%) ..			3.00	46.00	4	122
Thin cream (16%) ..			4.00	16.00	2	48
Marylebone cream				50.00	5	127

The writer has obtained such excellent results with an emulsion of linseed oil which is generally known as Marylebone cream. The formula for preparing 20 oz. of a mixture of separated dried milk and Marylebone cream is as follows (Formula IV.):

Separated dried milk, 1½ oz.
Marylebone cream (50 per cent. fat), 1½ oz.
Sugar, ½ oz.
Water, to 1 pint.

The cost of feeding infants on this mixture is only about 2d. a day.

When dried milks or other preserved foods are employed, it is well to give some fresh fruit-juice or other anti-scorbutic—a teaspoonful of orange juice, or the expressed juice of two grapes.

Such formulae must not be slavishly followed. The art of scientific feeding consists in the adaptation of the food to the individual requirements which can be understood only by a study of the infant both in health and disease, of the caloric values of food elements, and of the expenditure of heat and energy in the growing child. The above table will prove helpful.

All quantities must be based on the physiological requirements of the individual. As a rough basis for calculation it may be assumed that a normal infant of 3 months, requires from 40-50 calories per pound of body weight. That is to say, an infant of this age, weighing 10 lb., requires 400-500 calories in the 24 hours. Younger and smaller infants require a rather large number of calories per pound of body weight, and older and larger infants rather less. From these data it is easy to adjust the quantity of food in the requirements of different infants, allowance being made for special conditions. For instance, more food is required in cold weather, and when the infant is growing rapidly and manifesting greater muscular activity than in hot weather and when it increases in weight slowly and is inactive.

CONVERSATISM IN PELVIC SURGERY*

Report of a Case

JOHN W. PRICE, JR., M.D.
Louisville, Kentucky

The specimens which are herewith exhibited, consisting of the appendix, the Fallopian tubes, and portions of both ovaries, were removed from a female aged fifteen years who was married about four months ago. She gave the history of having suffered for several weeks from bilateral pelvic pain, the entire abdomen being tender; there had been nausea and elevation of temperature; vomiting had occurred once two weeks previously. A diagnosis of sub-acute appendicitis was made by the family physician and the patient was referred to me.

Examination at that time revealed pain in both sides of the pelvis, more marked on the right below McBurney's point, and there seemed to be slight fixation of the uterus. Diagnosis of sub-acute appendicitis was confirmed. In addition thereto, however, it was thought there was probably bilateral salpingitis. Immediate operation was advised and accepted.

Upon opening the abdomen the appendix was found indurated, congested, and attached to the Fallopian tube and the intestine by thin adhesions which extended downward over the brim of the pelvis. The Fallopian tubes were distended with fluid and tortuous, "curled" around the ovaries and adherent not only to the posterior layers of the broad ligaments but also to the uterus and intestine. The ovaries were enlarged and indurated, and in addition to presenting numerous small cystic formations, appeared to be under increased tension.

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*Clinical Report before the Louisville Surg. Soc. March 20, 1914.

It was immediately decided that the appendix and the tubes should be extirpated, but I was in some doubt as to the advisability of completely removing the ovaries; and that is my principal reason for presenting the specimens. After due consideration it was concluded best to remove a portion of each ovary, incorporating many of the small cysts, leaving the remainder. An expression of opinion is desired from the members of the society concerning the propriety of leaving porticns of the ovarian tissue under such circumstances.

Here was a girl fifteen years old whose husband gave a history of Neisserian urethral infection seven years ago. There had been no urethal discharge at any time since. The girl is of good family, and there is no reason to presume she had sexual intercourse with any one other than her husband. The ovaries were palpably implicated in the inflammatory exudate, they were infiltrated, indurated and cystic; they showed the presence of Grafian follicles which had apparently been unable to normally rupture on account of the induration of the surface; and it was a serious question whether to leave the ovaries intact or to entirely remove them; or to practice resection leaving portions of the ovarian tissue.

The specimens show the inflammatory exudate and the small cystic formations, some of the latter having been ruptured in removal. The appendix also exhibits marked evidence of inflammatory disease.

All surgeons are now working along conservative lines, and in operating upon cases of this kind of course it is desired to leave as much ovarian tissue as possible consistent with safety to the patient. The internal secretion of the ovary is considered just as important to the human economy as that of the thyroid, the thymus, the pituitary gland and the adrenals; and in the light of modern research on this subject, it is oftentimes a question just how far conservatism should be extended. I hope the members will discuss this feature.

DISCUSSION

Dr. C. W. Hibbitt:

This subject is especially interesting to me, because I have always endeavored to work along conservative lines. It is oftentimes difficult to decide just how far conservatism should be extended in cases such as the one reported. While the surgeon should preserve as much of the ovary as possible, this must always depend largely upon the conditions found within the abdomen. In the presence of inflammatory pelvic lesions, where the ovary is incorporated in adhesions which also involve the tube, if we leave the ovary together with some of the inflammatory exudate, in a short time additional adhesions will extend to the broad ligament and adjacent structures, and secondary operation will become necessary. It is a mistake to leave the ovary unless it has an abundant blood supply, since the function of the ovary (internal secretion) after removal of the corresponding tube depends upon the circulation; and if the ovary be left with a limited blood supply cystic formations may continue and thus again bring the woman to the operating table. If one is careful to preserve the blood supply, the ovary may be safely left intact and an artificial menopause be thus prevented.

The most important question is not leaving the ovary, but if it be left to be certain that it has an abundant blood supply.

Dr. J. G. Sherrill:

The question propounded by Dr. Price is of considerable interest. In a girl of fifteen years if it be possible to leave a portion of normal ovarian tissue it should undoubtedly be always done. On the other hand, if the ovary be even slightly diseased, will not the pain and subsequent trouble induced more than outweigh the expected beneficial effects from its presence?

My experience is that when inflammatory lesions of the tubes and ovaries have extended so far as in this case, it is wise to remove the major portion of the diseased tissue, leaving if possible fragments of the ovary in the hope of preventing the characteristic nervous phenomena which patients present in later life, i.e., to lessen the nervous manifestations at the menopause.

In operating for tubal involvement of the type presented, I would be inclined to leave the ovary if it did not show an excessive amount of inflammatory change; but where the ovary is adherent and incorporated in the inflammatory mass, it should invariably be removed. Undoubtedly in many instances secondary operation has been necessitated by the performance of primary so-called ultra-conservative surgery. So far as it relates to the ovary such conservatism exposees the patient to the risk of subsequent operation for removal of an organ which is practically functionless, at least so far as further child bearing is concerned, and I believe we are taking an unnecessary risk in leaving diseased ovaries behind.

What Dr. Hibbitt said about the blood supply must be admitted as true. If the ovary be left with an insufficient blood supply, however, it will most likely undergo atrophy and become functionless.

Dr. W. O. Roberts:

As I understand the matter, the question raised by Dr. Price is whether or not the ovary should be left after removal of the Fallopian tube. Certainly if the ovary is normal it should not be disturbed. On the contrary if it is cystic or incorporated with the tube in a mass of inflammatory exudate, its removal is demanded.

Dr. J. T. Windell:

I recently saw a young woman upon whom there had been performed several years previously an operation such as Dr. Price has described. During the last five or six years she had suffered from terrific abdominal pain, together with gastric discomfort, indigestion, etc. Dr. Hanes had performed some surgery upon the rectum of this patient, and she was referred to me for treatment of cystitis which under appropriate measures promptly subsided, but she still suffered at times from intense abdominal pain. The patient had undergone so many operations that she hesitated for some time before going to the hospital for further surgery, but was finally persuaded to do so.

The colon was found densely adherent in the right pelvis where the ovary and tube had been removed. The patient had practically been an invalid for a long time, and in my opinion the pathology existing when her tubes and ovaries were originally removed was responsible for all the suffering which she later endured. She has now completely recovered, and the case is merely mentioned to show what may be the result of an inflammatory lesion within the abdomen without the exercise of proper care in operative treatment.

The etiology in cases such as Dr. Price has presented would furnish an interesting theme for prolonged discussion. Why is it that young men are permitted to marry when they have not been cured of Neisserian urethral infection, and are almost certain to infect their wives? Why has education of the public been insufficient to prevent the occurrence of cases such as Dr. Price has presented? In my practice I make it a point to inform every man with Neisserian urethral infection concerning the dangers to the opposite sex, and insist that treatment be continued until it is absolutely certain a cure has been obtained.

Dr. Geo. A. Hendon:

In cases such as Dr. Price has reported it is my impression that infection first involves the Fallopian tube, and the ovary becomes infected from the focus of distribution. We are well aware of the enormous vitality of all organs of reproduction, and vitality of any particular organ is in proportion to its activity as a reproductive agent. Consequently the ovarian tissue naturally has great resisting powers. By removing the diseased tube, it may still exert a prominent influence upon the psychology it is believed the ovary has a good chance of entire recovery.

Another point to consider is the part the ovary plays in the nervous or psychical condition of the patient. When the reproductive function of the ovary is destroyed by removal of the tube, it may still exert a prominent influence upon thepsychology of the individual. This is one of the most important features in connection with disease of the genital organs in the female. The ovary being deprived of its function as a reproductive organ, all of the remaining energy is devoted to its internal secretion. Consequently in removing the tube if the ovary exhibits any reasonable degree of vitality, it is the height of wisdom to allow it to remain.

The point raised by Dr. Windell is germane and important, i.e., that adhesions subsequent to abdominal operations are not always do to the previous inflammation but may result from operative procedures imperfectly executed. Of course certain after effects may ensue even if the ovary be left intact due to formation of adhesions, Unless the ovary is practically detstroyed its function of supplying an internal secretion may continue in spite of the fact that it may have appeared extensively diseased. Consequently I now leave ovarian tissue to a greater extent than formerly, since I have been impressed with the great importance to the individual of the internal secretion furnished by the ovary.

Dr. J. W. Price, Jr. (Closing)

My chief reason for partially removing the ovaries in the case reported was that the external surface was markedly indurated, and the Graafian follicles which had developed to the stage where rupture should occur seemed unable to so do, and cystic formations had taken place. The development of deeper Graafian follicles had continued until the entire ovary had become filled with minute follicular cysts. As there was no likelihood of discontinuance of cystic formation, it appeared that partial removal was more conservative than leaving the entire ovary.

OVERMEDICATION

J. EPSTEIN, M. D.
Clinical Assistant in Medicine, Vanderbilt Clinic: in diseases of Children, Mount Sinai Hospital Dispensary.
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Infants and young children when attacked with diarrhea during the hot summer months are made to swallow all kinds of medicines. In no disease is there so much overmedication as in the so-called summer diarrhoea. The little patients have to overcome the effects of all sorts of nasty, sticky medicines in addition to their struggle against the diseased gastro-intestinal tract.

To show the kind of medication which thousands of sick children receive for gastro-intestinal troubles during the hot summer months, the following exact copies of prescriptions are here given:

(1) For a child 2 years old.

Bismuth subnitrate	20.0
Ess. Pepsini	8.0
Tannalbin	3.0
Tr. Krameriae	16.0
Mist. Cretae ad	96.0

Misce 4, every 2 hours.

In this prescription 5 different medications were used to fight a single diarrhea with the hope that something will strike somewhere along the gastro-intestinal tract. Of course, we must assume that the condition was so urgent as to require such large and frequent doses of bismuth subnitrate. Too large doses of medicines are just as bad as too small ineffectual doses. What therapeutic value the essence of pepsin will have in this alkaline mixture perhaps Esculapius may know. The dose of essence of pepsin in this prescription is too small to have any effect even in an acid medium. Tr. Krameria depends for its therapeutic value on the tannic acid it contains. the three grams of Tannalbin in this prescription contain all the tannic acid the physician wants.

On the whole. the poor child was compelled to swallow every 2 hours a teaspoonful of a nasty. sticky mass. The bismuth subnitrate with or without the tannalbin would do for the little patient more good than this heterogenous mass.

(2)	Tinct. Hyoscyamus	mx
	Tinct. Opii Camph.	3i
	Aquae Menthae pip	mx
	Bismuth subnitr.	gr. xv
	Mist. Cretae	zi
	Natri Benz. Caffein	gr. x
	Syr. Aurantic ad	℥iii

M. Sig. a teaspoonful every 2 hours.

This prescription speaks for itself and requires no comment.

(3)	Bismuth Subnitrate	3.0
	Syr. Gummosus	15.0
	Mist. Cretae	
	Elix. Lactopeptine aa ad	60.0

M. D. Sig. teaspoonful every 2 hours.

The addition of syr. gummosus makes this prescription a little more slimy and sticky. Syr. gummosus is another name for syr. acacia and mist. creta contains plenty of acacia.

The child would be more grateful to this physician had he left out of this prescription the syr. gummosus together with the chalk mixture and the elixir lactopeptine.

Bismuth subnitrate alone would serve the purpose and would not be disagreeable to take. The addition of a few grains of phenyl salicylate (salol) or tannigen or tannalbin would make up a pleasant and efficient powder.

(4)	Tannalbin	8.0
	Tr. Catechu	8.0
	Glyco-Thymolin	16.0
	Mist. Creta	24.0
	Aquae ad	60.0

M. Sig. a teaspoonful every 3 hours.

Tincture of Catechu contains a small quantity of tannic acid. It is not necessary in this or in any other prescription. especially when there is present eight grams of tannabalin. Glyco-thymolin was probably given here with the idea that it will act as a gastro-intestinal antiseptic. It is doubtful whether the physician knew the composition of glyco-thymolin, the kind of antiseptics it contains, and the proportion of each.

It would have been more to the physician's credit if he had written for some simple gastro-intestinal antiseptic, the composition of which is better known and may be given in exact doses.

(5)		
	Bismuth subnitrate	2.0
	Tr. Opii Camphor	2.0
	Tr. Catechu	8.0
	Elix. Lactopeptine	16.0
	Mist. Cretae ad	60.0

M. Sig. a teaspoonful every 2 hours.

The Tr. Catechu and the Elixir Lactopeptine could be left out of this prescription without any injustice to the child. Had the mist. creta been omitted, the little patient would not miss much.

The so-called summer diarrhea is only a symptom of certain affections of the gastro-intestinal tract. The first indication to successful treatment is a proper diagnosis.

In the treatment of this troublesome disease, the source of the trouble should be found and eliminated. The gastro-intestinal tract should be cleared with castor oil or calomel. The proper food for the condition and the age of the child should be ordered, preceded, in some cases, by a partial or complete starvation diet for about 24 hours. Proper hygiene must never be neglected.

In the majority of cases this fundamental and simple therapeutic procedure is all that is necessary. The gastro-intestinal tract wants rest and not gritty chalk mixtures or polypharmacy. If an astringent medication is really necessary, bismuth sulnitrate or subcarbonate with salol in proper doses will serve the purpose better than any gritty mixtures. Tannigen or tannalbin may serve as a useful addition to bismuth. Codein in the proper dose will do good in many cases. If chalk (calcium carbonate) is indicated it should be given as a fine powder and not as a viscous mass.

There is of course, no general rule to the therapeutic management of gastro-intestinal diseases, but under all circumstances our little patients want more rest, more care in feeding and hygiene, and less heterogenous gritty, sticky and slimy medicines.

SOCIETY TRANSACTIONS

THE NEW YORK ACADEMY OF MEDICINE

Section of Pediatrics

Stated Meeting Held April 9th, 1914

DR. WILLIAM P. NORTHRUP, IN THE CHAIR

The evening was devoted to a symposium on Whooping Cough.

Presentation of Patients.

Blue Sclera with Fragility of Bones—Dr. Charles Herrmann presented a child twenty months old with blue sclera associated with fragility of the bones. The parents of the child were healthy and there were three other children who were healthy and who began to walk and talk at the proper age. The patient had been nursed for ten months had digestive trouble occasionally and was always delicate. The first teeth appeared when the child was seven months old and she was able to sit up at nine months, but had never been able to stand or talk. In December, 1913, she fell from a chair and fractured the right tibia, and six weeks later while in bed with the cast applied she fractured the right femur. The patient shows a skull with a short antero-posterior diameter and prominent brow. The sclera were distinctly blue, not the bluish tinge seen frequently in tuberculosis, but a pale china blue. There were no marked sign of rickets. The fontanelle was closed, the child had twelve teeth, no rosary or enlargement of the epiphyses. The occurrence of the blue sclera had been noted by several English ophthalmologists. They were distinctly blue and the color was uniform throughout. Bluish patches the speaker said he had noticed in a number of colored children. The English observers had reported families in which several generations showed this peculiarity. It was usually transmitted through its female members, not all the members of the family, however, showed the blue sclera, and not all who had the blue sclera had fragile bones; but all those who had fragile bones had blue sclera. A somewhat similar sclera was seen in congenital heart disease and might be due to a similar cause, lack of fibrous tissue allowing the choroid to show through the thin sclera.

The fragility and lack of elasticity in the bones was probably due to a similar change in structure. As far as he knew, no pathological examination of the sclera and bones had been made in these cases. Radiographic examinations were made in this patient while the plaster cast was in place, so the minute structure of the bones was not shown. Now that the cast had been removed another radiographic examination would be made and the result shown at another meeting. The relation which these cases bore to those osteogenesis imperfecta or fragilitas ossium was interesting. They seemed to bear some relation to the late cases of the latter disease. The condition was rare and only recently had been described. This point could not be decided without careful radiological and pathological examination.

The Etiology of Pertussis—Dr. Anna Wessels Williams announced that they were still only able to report that they were nearing a time when they could fully demonstrate the specific etiological factor in whooping cough. They were continuing to add evidence but this did not yet amount to proof.

For complete proof of a specific cause of pertussis the demonstration of the same micro-organism in every case of whooping cough was lacking. The bacillus described by Bordet and Gengou had been reported by most observers as more frequently present than any other organism except those belonging to the influenza group in the narrow sense, that was to the group of hemoglobi nophilic bacilli. Many of these reports were based upon morphological findings in direct stained spreads, and by the microscopic method alone it was not possible in many cases to differentiate between the Brodet-Gengou bacillus and a large number of minute gram positive morphologically similar bacilli (chiefly of the influenza type) which were found in the respiratory tract of human beings, particularly in the latter stages of the inflammatory process. Very few of the causes had been examined from the beginning of the disease to the end, and furthermore very few cases died in the early stages of the disease so that autopsy findings were complicated by these mixed infections which seemed to be the direct cause of death in the majority of cases. Probably no case of pertussis was uncomplicated from the beginning to the end. In order to determine the presence of specific organism in infection in this locality one should be able to study the cases from the beginning to the end under favorable conditions for isolation and observation;

cases occurring in well-to-do and intelligent families were better suited for their purpose than those occurring in poor overcrowded homes, or in institutions and hospitals. The practicing physician should give them help in obtaining these favorable cases. The ideal place for the study was a special hospital where the children could be treated and studied with sufficient controls. Their studies had emphasized the truth of these observations. Most of the cases in which they had obtained an abundant and almost pure culture of a bacillus answering the description of the Bordet-Gengou had occurred in homes of the better class of people and were examined early in the disease. The Bordet-Gengou bacillus was easily overgrown by other bacteria, and so, unless present in great numbers it was difficult to isolate.

The majority of strains which they had isolated had been shown to be a species distinct from the hemoglobiniphilic bacilli and from certain other bacilli morphologically similar to the Bordet-Gengou bacillus. Not only were later cultural characteristics different, but these strains produced specific antibodies in experimental animals which gave a positive result with the complement fixation test. They had obtained strains from several cases that were not typically like those which they called the Bordet-Gengou bacillus and they were now making minute cross fixation tests in order to determine the important question of varieties in this species. The evidence thus far obtained pointed to the truth of the variety hypothesis. It proved true it could explain partly the varying results reported from the vaccine treatment and it would mean that either they must work out a suitable polyvalent vaccine, or that they must use an autogenous vaccine, at any rate in certain cases. Their finding had also pointed to the importance of mixed infections in pertussis cases, so, if further study proved the specific action of the Bordet-Gengou bacillus, or group of bacilli, the possibility of needing a mixed vaccine in certain cases must be considered unless treatment with a suitable polyvalent or autogenous vaccine given at the very beginning of the disease proved efficacious.

The complement fixation test with the serum of human beings having or having had petrussis was not as clear cut as it so far seemed to be with the serum of animals which had been artificially infected with the bacillus pertussis. Of course they could not expect it to be as marked in human beings as in hyperimmunized animals, but they might expect to find true the claim of Bordet and others that this test was positive with the serum of the great majority if not of all of the patients after the second week of the disease. Wollstein and others, however, had not obtained these uniformly positive reactions.

As to the second important lack in the proof of the specificity of a definite organism in this disease, that was, a sufficient number of cases studied completely in regard to their serum reactions at different stages of the disease with autogenous cultures and with others, they were confronted by many difficulties. Parents frequently object to their taking even one specimen of blood. The best method of making the complement fixation test was still under experiment. Different observers had used different methods of preparing both antigen and serum and has also employed different hemolytic systems. They had found that many of these methods did not stand the test of sufficient controls.

The third important lack was clear evidence of the specific lesion in pertusis. This question of the histological pathology of the disease had recently received a new impetus through the interesting hypothesis of Dr. Mallory, who claimed that a certain number of bacilli between the cilia of the epithelial cells in the trachea and bronchi constituted the specific lesion. He claimed that he had fulfilled Koch's law by the finding of these bacilli in experimental animals in the same situation and by the recovery of the culture from these animals. He now acknowledged that his results in animals were complicated by the fact that the animals were frequently infected by the B. bronchisepicus which was morphologically similar to the pertussis bacillus and which apparently had the same power, as Theobald Smith and others had pointed out, to cling to the cilia of the epithelial cells in the respiratory tract. In human beings, Mallory stated, only pertussis cases showed this lesion. It was to be supposed that chief among the controls were cases of children dying of influenza pneumonia. These were the cases in which they were most interested as controls.

As far as the examination of autopsies was concerned they had one suggestive case in a two year old child who died in the third week of pertussis apparently as the direct result of the disease. They had obtained from this case at the beginning of the second week of the disease a typical Bordet-Gengou bacillus from the sputum. From the autopsy material they were only able to obtain, on the Bordet-Gengou medium and other media, practically pure abundant growths of the hemoglobinophilic bacillus. Sections of the trachea and bronchi prepared according to Mallory directions showed surfaces mostly denuded of cilia. This was probably a post mortem change in his case as the autopsy was not done until forty-eight hours after death. Between the cilia remaining a few minute bacilli were seen which, from morphological possibilities, would have to be classed with the infuenza bacillus. It seemed to them that the Mallory lesion would be found to be only a part, and not strictly specific part of the whole, and that the specific toxin upon which Bordet insisted was an important aid in producing hypersensitiveness of the recurrent laryngeal and its center.

From their study they concluded as follows: 1. Though the Bordet-Gengou bacillus had not been found in the majority of cases of pertussis, it had been found most frequently under the best and most significant conditions and that there were sufficient reasons for not finding it under other conditions. 2. The irregular reports given of the complement fixation tests in human beings might be accounted for by the different methods used without making comparative studies and sufficient controls, and by the occurrence of distinct varieties in the species B. pertussis. 3. Three irregular results from vaccine treatment might be accounted for by the lack of definite group work among physicians with the establishment of a general plan and sufficient controls in each series of cases studied, at the same time taking into consideration the various points still under discussion. 4. The hypothesis of Mallory that the essential lesion of pertussis was chiefly a mechanical one could only be considered as a suggestion for further study in establishing the specificity of the Bordet-Gengou bacillus.

Whooping Cough—Dr. John S. Billings, representing the Commissioner of Health, Dr. Goldwater, said he had been requested to describe what the health department was doing in regard to whooping cough and what they purposed doing. Prior to the reorganization of the Bureau of Infectious Diseases they had not been active in combating whooping cough except to require that cases be reported and that they be excluded from the schools. Cases of whooping cough were not visited. The new plan of organization of the department which went into effect on January 1, 1914, required the sanitary supervision of whooping cough. This will be carried out by nurses as far as possible. The first month, January, had been spent in breaking in the nurses and during February and March their time was required in handling measles and scarlet fever, so that they had so far no time for visiting whooping cough cases. As soon as possible the nurses would visit the homes of whooping cough patients. The mothers or heads of families were sent a card describing the dangers of whooping cough and giving the prescriptions that should be taken to protect others from the disease. When the paroxysmal cough was no longer present the child could be readmitted to school. A comparison of the death certificates with the cases reported showed that notification was not closely observed, but they had not been drastic in enforcing this measure. The nurses would keep the children under observation and if the regulations of the department were not observed the child would be removed to the hospital. The speaker said he hoped they would soon have a whooping cough camp for these cases. Since January 1, 1914, the department had maintained one whooping cough clinic in Brooklyn, where during other hours a Wassermann clinic was also held. This clinic was not in a tenement district and so was not patronized to any extent. In 1913 a request from the Association of Out-Patient Clinics for information in regard to the establishment of special clinics for whooping cough cases led to investigation which showed that of 116 institutions there were 38 to which whooping cough cases applied for treatment; 78 had no such applications. Of the 38 to which whooping cough patients applied, 34 treated the cases that applied. There were two dispensaries that used vaccine and 28 that employed drugs. Five institutions had physicians visit whooping cough patients in their homes. In reply to the question "Do you report whooping cough?" Sixty-seven institutions said that they did not, while 49 said that they did report them. In reply to the question "Do you have special postals for this purpose?" sixty-eight institutions said they had no such postals, while 48 had them. In reply to the question as to whether they wished to establish special classes for whooping there were no positive answers, but 15 said they would consider the question. After the requirements for classes were explained to them 101 said they could not comply with them. An inquiry into the method of examining applicants showed that 102 of the institutions did not make any preliminary examination of applicants. The requirements of the department for special whooping cough clinics would probably be that the quarters used for this purpose should open directly on the street; that they should not be used for any other purpose; that they should be thoroughly scrubbed and cleaned after the clinic, and the windows left open during the entire time when not in use. Such clinics should be located in the tenement districts of the poorer class as it was useless to establish a clinic unless it was within walking distance of the people who would attend it. No person having whooping cough should use a public conveyance and the name care should be exercised in handling the sputum as was employed in cases of tuberculosis

The Clinical and Sociological Aspects of Whooping Cough. —Dr. John Lovett Morse of Boston gave this talk in which he referred to a study that he had made about a year ago in regard to the incidence and mortality of whooping cough the results of which were embodied in a paper read before the American Pediatric Society in May, 1913. The mortality statistics as compiled by the United States census bureau in 1906 from a registration area comprising a little less than one-half of the population of the United States showed that there were 6,324 deaths from whooping cough among children under five years of age. The reports of the United States public health service show that in 1910, the death rate per 100,000 population for whooping cough was 11.4 per cent.; for scarlet fever, 11.6 per cent.; for measles, 12.3 per cent. In 1911, Dr. Morse said he had communicated with the Boards of Health of thirty states and with a considerable number of cities scattered all over the United States with referrence to the relative incidence and the efforts at control of whooping cough. He had received replies from sixty-one and a comparative study of these replies showed that on the whole the death rate from whooping cough was greater in the large cities than in the small and greater in the small cities than in the rural districts. There were a large number of deaths from the complications of whooping cough which should be added to the mortality of the disease itself. The mortality of whooping cough was greater than that of scarlet fever but not greater than that from diphtheria. All the statistics showed that whooping cough was a serious and a fatal disease. In reply to inquiries as to what was being done to prevent the spread of the disease and to diminish the deathrate, it was shown that there was really very little effort being made in this direction. Of the states interrogated, only 29 replied.

In seven of these isolation was required by law and in two others "Modified isolation" was required. In only one-half of the states replying was whooping cough a notifiable disease. In regard to the mortality of the disease at different ages, a German statistician had shown that the mortality for children under one year of age was 26.8 per cent.; in children between one and two years, 23 per cent., and that it decreased in direct proportion as the age of the child increased. In this country 96 per cent. of the deaths from whooping cough occurred in children under five years of age. This made it evident where the efforts in preventive work must be directed. This inquiry showed further that there were practically no hospital accommodations for whooping cough in this country. There was a small ward in Bellevue for cases having complications, Philadelphia had somewhat better accomodations, New Orleans had a ward containing six beds, Cincinnati has one isolation building, and Johns Hopkins had a few beds. Whooping cough patients frequently came to the clinics and waited a long time among other patients and in some clinics they were allowed to come back at will. There were but two of three special clinics for whooping cough in this country. The speaker said he was under the impression that Mallory had proved conclusively that the Bordet-Gengou bacillus was the cause of whooping cough until he had listened to Dr. Williams' paper, and he still thought that for practical purposes it might be considered as such. This bacillus had been found in the sputum as late as the eighth week of the spasmodic stage and transmitted the disease through the secretions of the respiratory tract. While it was possible to infect some animals with the disease this method of transmission did not play an important part in the control of the whooping cough. It was the transmission by direct contagion that was the important factor. Owing to the indefinite length of the early symptoms and the mild course of the disease in many cases, almost everyone sooner or later had this affection. As a rule, however, it was only serious in young children. The isolation and recognition of the cultures was still to complicated a procedure for every day use. An agglutination reaction was present in many cases, but was not constant and usually not very high. In exceptional circumstances the complement fixation test might be of great service in the recognition of abortive and atypical cases. There was both an absolute and a relative increase in number of lymphocytes in the catarrhal stage of the disease. This blood picture was characteristic and might be of considerable diagnostic importance. Since, aside from the Public Health Service and the pediatrists, few appreciated that whooping cough was a serious and a fatal disease the first step in combatting it was to teach physicians and the public this fact. Whooping cough should be made everywhere a reportable disease. The house should be placarded and the inmates instructed by the authorities as to the seriousness of this disease in infancy. The vomitus and sputum should be treated in the same way as in tuberculosis. The patient should be separated from other children in the family when the latter are under five years of age. Children might be allowed to go out of doors provided they were kept from other children. They should. however, be obliged to wear an arm band of some prescribed color on which should be placed in large letters in some prescribed color "Whooping Cough." As the vitality of the Bordet-Gengou bacillus was slight outside the body and it had no tolerance of light and air formal disinfection was not necessary. Other children in the family should not be allowed to attend school unless they had already had the disease or unless two weeks had elapsed since. The community should be required to establish hospitals for children not properly isolated at home and for those who could not be properly treated in their homes. When these recommendations were carried out whooping cough would cease to be the scourge that it now was.

The Treatment of Pertussis.—Dr. Edwin E. Graham, Philadelphia, said that the treatment of pertussis was one which had always absorbed a large degree of medical attention, and the mere enumeration of all the drugs, inhalations and cures which had from time to time been brought forward would consume more time than had been allotted to him. Particular attention will be drawn only to a few of the drugs and methods of treatment that have stood the test of long experience.

As pertussis was contagious from the beginning of the catarrhal stage until the end of the spasmodic stage, a period of about eight weeks, it was important that all children who had not had the disease be kept separate from the individual who had it, and in order for quarantine to be effective, all unexposed children should be sent away from the house during the entire period of contagion, this applied particularly to infants, to children who were not robust and to those who had a tendency to tuberculosis. A child with pertussis should not be allowed to attend school, and quarantine should be maintained until the end of the spasmodic stage.

All children with pertussis should be given an abundance of fresh air and should be kept in bed if their temperature was 100° F. or higher. If the patient was sufficiently ill to be in bed the windows should be open day and night; if not in bed the child should spend as much time as possible out of doors. However, excitement and violent exercise tended to increase the attacks. An acute laryngitis or rhinitis was however, not benefited by cold air; for such cases the air in the sick room must be kept fresh but not cold. A change of air, especially to the seashore, was often of benefit and a change from a raw, damp climate to a warmer and milder one was often followed by improvement. If the child had been confined to bed for any considerable time it was an advantage to remove him to another room and thoroughly house clean the room before returning him to it. Many cases of whooping cough in hospitals suffered from a mixed infection, and at least a temporary benefit would follow their removal to a recently cleaned and fumigated ward. All children with pertussis should be fed in small quantities and often; if a child vomited soon after the ingestion of nourishment, it should be given another feeding to replace the one vomited. Gastrointestinal disorders in young children suffering from pertussis often constituted a dangerous complication and should receive early and careful dietetic and medical treatment.

Local applications to the nasopharynx, if made during the first two weeks of the disease, might be of decided value. They were of assistance only when the infection was localized in the upper air passages. An application of a two per cent. nitrate of silver solution applied to the nasopharynx, by producing death of the superficial membrane, and possibly destroying some of the specific pertussis bacilli, tended to prevent the spread of the infection to the deeper respiratory passages. Phenol, one per cent., had also been used successfully as a local application. It should be used early and might be repeated every second day.

Various drugs had been used by inhalation, among which were creosote and carbolic acid. They might be used in the ordinary inhaler covering the nose and mouth or by vapour in the room of the patient. They acted as a sedative to the inflamed mucous membrane. As children were especially susceptible to carbolic acid poisoning the urine must be watched closely.

Chloroform might also be given cautiously by the physician when the paroxysms were especially severe and frequent. When the spasm of the glottis was especially severe intibation might be done and often gave relief.

The medicinal treatment of pertussis might be divided for convenience into two parts: First, drugs or other methods which per se had a tendency to lessen the number and severity of the paroxysms. Second, drugs or other methods that were directed to the treatment of the complications of pertussis. Among the drugs that were useful in pertussis must be mentioned belladona. The author used the tincture, beginning with one drop three times a day and increasing the daily quantity by one or two drops until mild physiological effects of the drug appeared, when the increasing of the dose must be cautiously continued. Antipyrin was a useful drug, but personally, he never used it in the frequent doses so often advised. A single dose at bed time or a morning and evening dose was as much as in his opinion, it was wise to employ. Bromide of sodium, five grains, three or four times a day, to a child of three years was often of benefit, and codein, trional, heroin, and chloral were often of benefit in allaying cough and inducing sleep. They might be given in a single dose at bed time, or, if necessary, two or three times a day. A combination of quinine, two parts, veronal, one part, had been used sucessfully by Professor Winternitz of Vienna. He claimed improvement in 26 out of 30 children in whom he had used the combined drugs, but believed that it only acted as long as given, and was not a cure. Frankel and Hauptmann also advised this combination of veronal and quinine. They did not advise its use in children under six months of age. Sollman and Hatcher reported favorable results from a combination of quinine, one or two grains, and bromide, one or two grains, repeated three or four times a day for a child two years of age. Quinine had been given in large doses and might reduce not only the number, but the severity of the paroxysms. It was not an antispasmodic, and if it produced any effect in these large doses it must be due to some effect on the causal bacillus. Lenxmann had reported some interesting results from the giving of quinine intravenously and hypodermically. He secured very prompt and positive results from doses of five grains injected intravenously every second day. Quinine lactate, 10 grams, and saline solution, 100 grams, of which two and one-half c.c. warm was injected intravenously might be similarly used. If given hypodermically into the muscles the effect was favorable, but not as prompt nor as satisfactory as when given intravenously. Hydroquinine had been employed both intravenously and intramuscularly but its action was more favorable when injected into the vein. It came in ampoules, the dose being proportioned to the age of the child. A daily dose was given for five or six days, then a dose every second day, and it was claimed that a marked improvement was noted after the first week of treatment. No disagreeable local or constitutional symptoms followed after these injections and so much was claimed for this treatment that it was worthy of more extended trials. Hydroquinine had been used both intravenously and intramuscularly as a prophylactic with satisfactory results. Adrenalin had been strongly advised in the treatment of pertussis by Fletcher, and others had reported favorable results following its use. He treated 15 cases, giving two or three drops of 1-1000 adrenalin solution every two or three hours and claimed that in two or three weeks the patients were entirely well. He believed that the rapid cure of these cases prevented the spread of pertussis and that the adrenalin exerted a specific action on the causal agent of pertussis.

Every close student of pertussis must have been impressed with the psychic element that so often entered into the disease, especially in neurotic children. If the mother and those who were brought in contact with the nervous child were also neurotic, all the conditions were favorable for the development of marked psychic phenomena. It was quite possible in such cases to use suggestion advantageously as an aid in the treatment.

The writer related two cases which illustrated the necessity of a correct diagnosis of complications in pertussis. The first was a boy of 13 months with a tuberculous family history and himself tuberculous. He passed successfully through a severe attack of pertusis complicated with bronchopneumonia. In the stage of decline he became more and more drowsy and a clear fluid was removed by lumbar puncture in which the tubercle bacilli could not be found and a guinea pig injected with three c.c. of the fluid failed to develop tuberculosis. There had never been any discharge from the ears but a drop or two of fluid was obtained by swabbing the ear and pus was obtained from both ears by puncturing the drums; the day following a double mastoiditis with secondary otitic meningitis. Another case of interest was that of the seven year old son of a physician, who, during an attack of pertussis, had an unusually severe paroxysm on February 15th. The next morning he had fever and vomiting. His vision continued to decline until March 13 when it was found to be; left, 11-200; right, 20-200. The discs were pale, the retinal arteries reduced in siz, and the field of view concentrically contracted. There had been a high grade double optic neuritis; at present there was total secondary atrophy, disseminated choriditis of both eyes and divergence. The vision was reduced to light perception. Under ethyl chloride narcosis, the pupils contracted ad maximum. The diagnosis was hemorrhage into the sheath of the nerve at the optic chiasm.

In regard to the vaccine treatment, a large number of articles had appeared on this subject and a close study of these as well as of his cases had convinced Dr. Graham that the vaccine treatment was a distinct addition to their methods of treatment; it was also of more or less use as a prophylactic. In a case of moderate severity in an infant or an older child, when the number of paroxysms was few and of mild character, the vaccine treatment was not necessary, but it was often of distinct benefit in severe cases, in children of all ages, and its influence as a prophylactic where infants had been exposed, or where frail or tuberculous children had been infected, should be carefully worked out.

Dr. Graham reviewed the reports of Dr. E. M. Sill, Dr. Freeman of London, Dr. Charles Nicolle and Dr. A. Connor, Dr. Lagane, Professor Manaticide on the vaccine treatment of pertussis and concluded that almost all of them were favorable to the treatment, and it seemed to him advisable to use the combined vaccines in the treatment of severe cases of pertussis. The final verdict to its efficiency could only be decided by additional evidence.

The Need of Hospitals for Whooping Cough in New York City.—Dr. Godfrey R. Pisek presented this communication. He declared that if the investigation which had just been made of our Municipal Institutions had been extended to the accommodations which they had provided for cases of pertussis the survey would not have consumed much time. In this respect our municipality was no better and not much worse than other great centers of the world. Pertussis, through its commonest complication, bronchopneumonia, carried away a large number of the children of New York every year. There were in the year 1913, a total of 420 deaths from whooping cough in the greater city. Of these, 49.5 per cent. occurred during the first year of life, 33.4 per cent. between the first and second years, 8.8 per cent. between the second and third years, and 5.2 per cent. between the three and four years. Only 1.2 per cent. of the mortality occurred after the age of five years. It was a well-known and deplorable fact that many children succumbed to tuberculosis following their paroxysmal attack. The incidence and mortality of whooping cough in Greater New York during the past few years was as follows: In 1910, there were 2,018 cases with 294 deaths; in 1911, 3,210 cases with 384 deaths; in 1912, 2,132 cases with 287 deaths; in 1913, 3,529 cases with 420 deaths. During 1913, there were 1,333 deaths from diphtheria, 628 from measles, 507 from scarlet fever, and 420 from whooping cough. In children under the age of five years there were more attacked by whooping cough than by scarlet fever and the mortality was almost as high. There were ample hospital provisions for typhoid fever and yet there were only twelve children under the age of five years who had typhoid fever in the year 1913. There were in New York City 1,884 available beds for infants and children in the public and semi-private hospitals, and 2,350 beds in the various hospitals for contagious diseases, yet of these there were only ten set apart at Bellevue for cases of whooping cough with complications, and thirty at the Metropolitan Hospital. If whooping cough had been born with some kind of a rash it would not now need any advocates to point out the dangers with which it was attended. As things were the laity regarded this disease as not particularly dangerous and the the physician often fostered the same idea, so that it received comparatively little medical attention until the patient had serious and often fatal complications. Believing that many cases were not reported and that many more did not reach the physician, they had made an investigation of the deaths attributed to whooping cough and found that of every 63 deaths from this cause only one had previously been reported to the department. The figures of the Department of Child Hygiene relating to contagious diseases reported by the inspectors in the schools or found at home were significant in this connection. In 1912, 372 cases of whooping cough were found at school and 466 by absentee visits, making a total of 838. In 1913, 291 were found in school and 445 by absentee visits, making a total of 735 cases. The reason that whooping cough was not more effectually controlled by the Health Department was because of certain difficulties which differentiated it from other contagious diseases. The comparatively long first stage in which the diagnosis was often uncertain for days, and the long duration and questionable period of ''safety for others'' made the disease difficult to handle from the Department standpoint. In attempting to formulate any plan for better control the valid objections to general hospital care must be recognized, but there was still much to be said in favor of hospital care for cases with complications and segregation of others affected with the disease. There were in our large population cases of whooping cough in families who were unable to provide medical care because of poverty. These were compelled to go to the dispensaries, where after waiting and mingling with other children, they were singled out as pariahs and sent home, often untreated because of lack of suitable provisions and with no instructions as to the care and prevention of the spread of the disease. Where the mother was the bread-winner and the Day Nursery refused to care for the child a serious economical question was involved. Again, an infant with bronchopneumonia, who needed judicious stimulation, skilled nursing and an abundance of fresh air was deprived of these and allowed to die in a tenement for lack of municipal facilities. If an intensive study of the disease were made in a selected section of the city it seemed certain that many more cases of whooping cough would come to light than had been reported. Such a study would furnish an accurate basis upon which hospital beds could be apportioned. At the present time there are suitable available buildings. These should be built on the open pavilion plan near the water fronts, and especially designed for this purpose; at least one for each borough. Disused ferry boats or barges moored to the city docks could be utilized for this purpose; on these a small hospital ward could be arranged for those needing medical attention. Dispensaries for ambulant cases could be held there and to these places patients from other clinics could be referred. Children with their mothers could be taken in stages provided by the city to these boats and allowed to spend the day out-of doors, returning to their homes at night. With such a plan a large number could be educated to follow proper methods of prevention and well children could be spared contact and deaths from complicating conditions prevented. In regard to the prevalence of the disease in this section, Dr. Pisek said that his own histories of his last 500 patients under 10 years of age showed that 45.8 per cent had had whooping cough. There could be little question but that provision for whooping cough cases would promote the public welfare and at the same time would give physicians an opportunity to study the disease as to its early diagnosis, and to perfect treatment along more scientific lines. To this end the writer recommended that a committee be appointed who should present to the Health Commissioner a recommendation urging the establishment of wards for urgent cases of pertussis, and segregation centers for uncomplicated cases.

Dr. John Winters Brannan said that they would have to acknowledge that their provisions for the care of whooping cough patients were inadequate. Bellevue had ten beds for complicated cases and the Metropolitan Hospital made provision for a few cases. The meeting this evening was one of the most important from the standpoint of public health that they had had for years. He had not realized that conditions were as bad as they had been shown to be. It was to be regretted that they had failed in the attempt to moor the boat Helen C. Kuilliard off William Parker Hospital, but he hoped they would have a boat next year. There were few places around Manhattan suitable for a whooping cough boat as it was necessary to have such a boat near a hospital.

Dr. Rowland G. Freeman said that they were greatly indebted to Dr. Morse and Dr. Graham for their valuable contributions. Concerning what Dr. Morse had said in regard to the spread of whooping cough he would like to emphasize the point that it was difficult to limit the spread of this disease during the first two weeks as it was often impossible to make a definite diagnosis. Two points however, were of great value: these were a peristent increasing cough without other catarrhal symptoms and a high lymphocytosis. If a child over three years of age with a suspicious cough showed a lymphocytosis approaching 50 per cent., the diagnosis was fairly certain. While infant mortality and general mortality had markedly diminished in recent years contagious diseases showed little diminution. This was because the diseases were largely spread by the schools and no effective action had been taken to prevent their spread. This could only be prevented by keeping children who had been thoroughly exposed to contagious disease away from school during the latter part of the period of incubation, and such rules were now in force in the best private schools in New York.

Mortality of Whooping Cough.—Dr. Charles Gilmore Kerley said that the mortality statistics for whooping cough did not give a proper impression of the extent of the ravages of that disease as it played an important part in diminishing the resistance of the child and thus lessened its chances of surviving the diarrheal diseases of summer. The same was true with reference to tuberculosis; with the diminished resistance following whooping cough the child more readily fell a victim to this affection. As to isolation, if the child was taken out of school it went into the street and there mingled with other children. The attempt to isolate the child in the family was futile since by the time that a diagnosis of whooping cough could be made every other child in the family had been exposed. Mild cases were very difficult to diagnose. Dr. Kerley said he agreed with what had been said in regard to changing the room of the whooping cough patient; it was a great advantage for the child to have a different room to sleep in from the one occupied during the day. The statement was made that with the nitrate of silver treatment all patients improved after three or four weeks; any case would be better by that time. He had found quinine alternated with bromide of sodium and antipyrine very acceptable. In an interview with Dr. Freeman last summer he had found that Dr. Freeman was not so enthusiastic in regard to the vaccine treatment as Dr. Graham's statistics would lead one to suppose. Dr. Freeman had said, however, that the vaccines did no harm. His usual dose was two hundred million twice a week. He had used the pneumococcus vaccine with these and thought this an advantage in preventing pneumonia.

Dr. Matthias Nicoll, Jr., said that he had read all the reports in regard to the value of the vaccine treatment but had never seen one in which an analysis of the case records as given, convinced him of the great value of the remedy, although many of the writers drew favorable conclusions hardly warranted by the statistics. From what Dr. Williams had said of the probable variable nature of the infecting organism, it was logical to expect variable results with the employment of stock vaccine. Very great differences in the clinical course of the disease as well as the character of the prevailing epidemics made the reports of a few cases of little value as a means of judging the specific action of the remedy, especially if controls were not used in practically every case. In the last analysis the strictest test of the value of a specific remedy must be its power to prevent a disease and a vaccine that could not do this could hardly be expected to overcome a disease when once established. A small number of cases had been reported in which such a protective action seemed to have been established. However, the number of such instances was by no means sufficiently large to warrant positive conclusions, for it must be remembered that all children did not take the disease even when very fully exposed to it. For instance, Dr. Nicoll had gone into a children's ward in which the forty or more occupants had lived for three or four months during which about thirty of the children had contracted the disease while the others, most of whom were from one to two years of age, escaped in spite of the closest and most constant contact. The contemplated immunity experiment in this instance was naturally abandoned. During the past eight months at the Research Laboratory about eighty cases of whooping cough had been treated with vaccines and the course of the disease followed as carefully as circumstances would permit. The cases had been treated in institutions, in clinics, and in their homes, either by members of the laboratory staff or by private physicians and hospital staffs. Three strains of vaccines had been used; the first, was made from imported Bordet-Gengou strains combined with three strains of hemoglobiniphilic organisms isolated from cases of whooping cough; the second was made from the same imported organisms combined with two strains of somewhat atypical Bordet-Gengou organisms from locas cases giving a similar complement fixation reaction as the former; and the third was made from four strains of typical Bordet-Gengou organisms isolated from local cases. The results of the treatment had varied markedly. A number of cases showed very distinct and rapid improvement; others seemed to be little affected. The mild character of the symptoms observed since early autumn had done much to prevent a definite opinion as to the real value of specific treatment, many cases not treated running a very favorable course. In brief, it might be said that there was an indication of value in many of the cases treated with vaccine but in order to form a really definite opinion, it would be necessary to treat many more cases and to have the children under such observation as would render the clinical reports of much more value than they had hitherto possessed. The present lack of effort to control and care for the disease was a disgrace to the community and it was to be hoped that the Department of Health would continue to direct its attention to this problem. The setting aside of ten additional beds was little more than an entering wedge. He thought he voiced the opinion of every physician who had the welfare of the community at heart when he stated that the authorities should take action immediately to solve the problem of a disease which killed nearly five hundred children in the City of New York during the past year and especially that provision should be made for the care of young children having whooping cough complicated by pneumonia and unable to be placed under the care of a private physician.

Dr. Haven Emerson said he had come to listen and not to speak, but he could assure them that the activities of the Health Department would be increased along this line.

Dr. S. J. Metzger asked Dr. Williams whether the statement he had heard made that Mallory had in his experiments the B. bronchosepticus, that was, the distemper bacillus instead of the bacillus Bordet-Gengou was true.

Dr. Williams replied that Mallory had stated, as she had said in her paper, that his animal experiments were not sufficiently controlled, that possibly the animals might have had the B. bronchosepticus.

RETROSPECT OF CURRENT PEDIATRIC LITERATURE

Diseases of the Alimentary System.

Under the Charge of

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Acute Acid Intoxication in Children.—Summing up and correlating various views as to the etiology of the condition, T. C. McCleave (Jour. A. M. A., 1913, lxi, 1764) says that in children who suffer from periodic attacks of acid intoxication or recurrent vomiting, there is probably almost always some chronic focus of infection, adenoids, diseased tonsils, an inflamed bowel or appendix, or what not, the toxins from which, being constantly absorbed, act primarily on the liver. From time to time, by reason of the cumulative effect of the toxins, or to further disturbance of the already impaired equilibrium of metabolism by dietetic indiscretions, or by excitement, fatigue or other nervous element, there results a failure of the liver properly to perform its functions. The processes of carbohydrate metabolism are first disrarranged, the frequency and severity of the attack in childhood, perhaps, being due to the fact that the reserve supply of glycogen in the liver is not so great, proportionately in children as in adults, and that therefore any interference with the glycogen-storing or glycolytic powers of the liver, there being no longer a proper supply of sugar available, induces an immediate disturbance of fat and protein metabolism, manifested by the appearance in the urine of the toxic bodies. How these operate to produce the prostration, vomiting, rapid wasting, vasomotor changes, nervous disturbances and other characteristic symptoms cannot yet be explained. The determination and proper treatment of foci of infection are of fundamental importance. Next may be placed a properly balanced dietary, low in fats, with ample amounts of carbohydrate and milk and lean meats in moderation, with plenty of its injections into one or the other of these cavities. By comparing the results of these tests with those obtained in hydrocephalus, we are enabled to establish two types of this disease. In the first type, the excretion of phenolsulphonephthalein after its injection into the subarachnoid space is practically normal (time of appearance from six to eight minutes, quantity excreted in two hours from 25 to 60 per cent.) after the injection of phenolsulphonephthalein into the ventricles, it has not, in the cases observed, appeared in the spinal fluid. In this group, necropsy has shown an obstruction to the passage of cerebrospinal fluid from the ventricles to the subarachnoid space. In the second type the excretion of phenolsulphonephthalein after its injection into the subarachnoid space is greatly diminished (from 8 to 15 per cent.), and the appearance time delayed (from twenty to thirty minutes.) The amount excreted after its injection into the ventricles likewise is greatly diminished, undoubtedly due to the low subarachnoid absorption. In contradistinction to the first type the communication between the ventricles and the subarachnoid space is open. This is shown by the prompt (from two to three minutes) appearance in the spinal fluid of phenolsulphonephthalein after its injection into the ventricles.

Influence of Atmospheric Conditions on Mortality of Infants with Gastro-intestinal Disorders.—A. S. Bleyer (Amer. Jour. Dis. Child., 1913, vi, 319) presents charts showing the total number of deaths from nonsurgical disorders and diseases of the gastrointestinal tract which occurred among infants in the first two years of life in St. Louis on each day of the months May, June, July, August and September of the years 1910, 1911 and 1912 (deaths in the first week of life were not included), the mean of the daily maximum and minimum temperatures, the mean relative humidity for each day as determined by averaging the relative humidity at 7 a. m. and 7 p. m., and the average wind velocity per hour for each day. These charts appear to show that definite relation between atmospheric heat and deaths among infants suffering with gastrointestinal disturbance exists; at what degree of heat lethal effects are seen does not appear in these charts. So-called "heat-peaks" or short-lasting but excessive temperatures doubtless emphasize, but they do not dominate the summer infant death rate; whether many of these deaths are the direct result of "heat-stroke," although easily supposable, has not been shown. Continuous heat shows a stronger relation, although not necessarily an immediate relation, to deaths of infants suffering with gastrointestinal disorders, which, as infants are now housed and fed, is very fairly constant.

Summer Diarrheas in Children.—Observations on summer diarrheas in children at the Boston Floating Hospital in 1911 were made by A. I. Kendall and A. A. Day (Bos. Med. and Surg. Jour., 1913, clxix, 741, 753). The bacteriological data reported are derived from examinations of the stools from 146 cases, together with clinical and postmortem observations. The striking fact brought out is that in every case of infantile diarrhea studied (with the exception of the few fermentative diarrhea) there was a general conformity in bacterial type of the intestinal flora, which was uniformly proteolytic in character. This proteolytic flora forms a striking contrast to that of normal children of similar age, in which the putrefactive activities are minimal. Superimposed upon this proteolytic background various of the well-known intestinal pathogens may stand out conspiciously. In the past the isolation of such organisms has sufficed to establish the diagnosis; it now appears that such is not necessarily the case, inasmuch as one or more of them may be present without the production of noteworthy symptoms. On the other hand, cases are met with in which these organisms cannot be found, yet show blood, pus and mucus in the stools, and severe toxemia. In these latter cases the flora has been found to be proteolytic in character.

The summer of 1912 was noteworthy from the bacteriological point of view for the large number of cases of severe diarrhea in young children, apparently of gas bacillus origin, 53 of a total of 135. Since an excess of utilizable carbohydrate and a deficiency of the normal acidoduric flora are the principal factors which permit an overgrowth of gas bacilli, the theoretical treatment would be a restriction of the carbohydrate and the introduction of appropriate acid-producing bacteria into the intestinal tract. Theoretically the simple expedient of restricting carbohydrate should bring relief in all except the desperate cases. Ordinarily the lactic acid which exists preformed in fat-free buttermilk (the vehicle in which lactic acid bacilli are ordinarily introduced) is immediately available, being carried rapidly to the site of gas bacillus activity by the increased peristalsis which is a feature of these diarrhea. The premises upon which this treatment is based appear to be sound. Feeding carbohydrate, particularly sugar, to this type of diarrheal cases results in a prompt rise of temperature, often several degrees, a prompt aggravation of the symptoms and an immediate increase in the number of stools.

Measured Feeding for Older Children.—W. R. P. Emerson (Brit. Med. and Surg. Jour., 1914, clxx, 80) believes that the diet of all improperly nourished children and occasionally of well-nourished children should be checked up and controlled by measured feeding. A preliminary forty-eight-hour list, kept without any suggestions from the physician, shows the quantity and kind of food habitually taken as well as the likes and dislikes of the child. Changes in diet should be made gradually along lines of least resistance. Cooperation of both child and parent is necessary for successful feeding. Both should be disabused of ideas and prejudices which interfere with proper nourishment. The average gain on diet alone of children who are under weight should be from one-half to two pounds per week. If no gain is made, organic disturbances or toxic absorption should be suspected. Serious errors in diet cannot be detected by asking the child about his appetite or the mother about the diet given. Food must be recorded and measured in order to show how much is taken. Almost invariably the overweight child is overweight because he eats too much, and the underweight child is underweight because he eats too little.

Food Requirements of Infants.—E. Pritchard (Brit. Jour. Child. Dis., 1914, xi, 49) states that no infant, breast-fed or artificially fed, can be considered to be in a satisfactory condition unless its physiological demand for food is of the following approximate standard. An infant three months old and weighing 5 kgm. (11 pounds) should require not less than 690 c.c. (23 ounces) of breast-milk, or its equivalent, in the twenty-four hours; an infant six months old and weighing 7.5 kgm. (16½ pounds) should require not less than 900 c.c. (30 ounces); and an infant nine months of age should require not less than 1080 c.c. (36 ounces). If, when taking food in these quantities, there is evidence that there is an excessive intake, steps should be taken to increase the demand for food by a revision of the hygienic management of the child. A demand is created when the appropriate stimuli of air, light, and cold are applied. An excessive intake is suggested by an abnormal increase in weight, say of 10 to 14 ounces per week, in a baby under a year old if maintained for any prolonged period of time, tilatation of the capillaries of the cheeks, sweating about the head, and unduly rapid respiration-rate.

"Whey Modified Milk" in Infant Feeding.—According to Schloss the chief reason infants do not thrive as well on cows's milk as on human milk is not because the proteid, or the fat, or the sugar is different, and easier to digest in human milk than in cow's milk, but rather because the percentage and the concentration of the salts are different in the two milks. Schloss devised the following modification of cow's milk, which he called "whey modified milk." To make one liter of the mixture the following ingredients are used: 20 per cent. cream, 140 c.c.; full milk, 140 c.c.; water, 700 c.c.; KCl, 0.2 gm. For infants under three months, he adds to this: dextrin and maltose, 35gms., flour, 15 gms., nutrose or plasmon, 5 gms. For infants over three months he adds, instead, dextrin and maltose, 50 to 70 gms., nutrose or plasmon, 5 gms. If flour is used, it must be boiled with the sugar, casein preparation and water for fifteen minutes. If no flour is used, the mixture is simply brought to the boiling point. J. S. Leopold (Arch. Pediatrics, 1914, xxxi, 20) has used this "whey modified milk" in thirty infants during the past year, all institutional infants. The ages varied from eleven days to thirteen months. All but eight of the infants were under six months of age. In none of these cases was the condition of the infant made worse by this feeding. No deaths resulted. In some cases, and especially in infants over six months of age, at times it was impossible to induce a gain in weight with this feeding. These older infants remained well in every respect, but for some unknown reason no increase in weight could be obtained. In some of these instances, gain in weight resulted as soon as a simple milk mixture was substituted for the "whey modified milk." On the other hand, "whey modified milk," seems to be especially indicated in very young infants when breast milk cannot be obtained. Infants take this feeding very well, and, as a rule, have alkaline, yellow, pasty, homogeneous stools, as described by Schloss. Gain in weight is usually observed if no intercurrent disease is present. This mixture is especially useful in institutions in whch breast milk is not obtainable, or is obtained with great difficulty.

Neurotic Vomiting in an Infant.—The essential features of the case reported by W. B. McClure (Amer. Jour. Dis. Child., 1914, vii, 48) were: The sudden onset of vomiting at the age of three and one-half months, with retention of breast milk while artificial food was vomited, and the persistence of the vomiting despite the great variety of liquid foods given, with cure resulting promptly on giving semi-solid food. The usual causes of persistent vomiting having been satisfactorily excluded, the vomiting was explained as a neurotic manifestation. The apparent willfulness of the vomiting, as suggested by the movements of the lips and jaws, with the seeming satisfaction at its completion; the mode of cure (the baby, for a long time after feeding of farina were given, continued the movements of the lips and jaws, but was unable to regurgitate this semi-solid food): and the evident neurotic constitution of the child, as shown by the acquiring of the head-rolling habit, supported this explanation. It seems not unlikely that there is a considerable number of instances of chronic vomiting of this type which either go unrecognized or, when recognized, are found difficult to cure.

Stomachaches Associated with General Infections in Childhood.—H. T. Gray (Practitioner, 1914, xcii, 26) is convinced that many of the intestinal and dyspeptic troubles of later life owe their origin, in part at least, to intestinal disorders in childhood. These not only originate from the artificial conditions under which we live with regard to unsuitable food, etc., but may arise in some instances from repeated acute, or persistent and untreated chronic, general infections. It is our duty to control or to remove the exciting causes of these lesions, before they have advanced to such a degree as to cause permanent gross changes in the intestine or its mesentery. As the commonest sources of general infections in childhood are the mouth, teeth, fauces, and naso-pharynx, together with secondary infectious of the ears, cervical glands, etc. Particular attention should be paid to these as well as to the routine control of the diet, to the presence of worms, etc., as points in the treatment of chronic abdominal pain. Thus we shall be called upon less often to treat, both in children and adults, some of the grave intestinal disorders, of which chronic "stomachaches" are not infrequently the neglected warning.

Infectious Diseases.

Under the Charge of

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The Control of Whooping Cough.—The great prevalence of whooping cough has long been a reproach; in this city during certain months of the year the direct mortality is apt to exceed that from either measles or scarlet fever, and for the last three years the annual mortality of whooping cough has been somewhat more than half that of measles and of scarlet fever, the number of deaths from which was almost exactly the same. In 1913, however, this proportion was very considerably increased, and the deaths from whooping cough were about two-thirds those from measles and four-fifths those from scarlet fever. There is no means of determining what the indirect mortality is—this can only be conjectured, but it is undoubtedly large. Many of the deaths from bronchopneumonia must be attributed to whooping cough. Convulsions sometimes supervene upon the original disease or the resulting bronchopneumonia, and may be the immediate cause of death. Various other complications, as is well known, are liable to occur and either cause a fatal issue or lead to permanent disabilities. Goodhart includes among results and sequelae, emaciation of the viscera, various forms of degeneration, cheesy change in the glands, secondary tuberculosis, atelectasis, bronchopneumonia, emphysema, and dilatation of the bronchial tubes. "Thus it is that after a bad attack of whooping cough the child often remains delicate, with a small and laterally flattened chest; the lower ribs being expanded over the abdominal viscera, thus causing the disproportion between the abdomen and thorax which is so common as a result of old atelectasis."

At last the pediatrists of this city have become thoroughly aroused to the inadequacy of the methods for the control of the disease, and at the April meeting of the section in pediatrics of the Academy of Medicine, a resolution was adopted, providing for the appointment of a committee to urge upon the department of health the necessity of making more ample provision for dealing with whooping cough. It is gratifying to learn that the department responded pomptly. It is announced that a survey has been made of 116 hospitals and dispensaries to ascertain which institutions treat whooping cough at the present time, which desire to maintain whooping cough clinics, and what facilities these posses for handling the disease. Only five institutions have a district physician attending whooping cough patients at their homes, and only four—three hospitals and one dispensary—maintain classes for treating cases on the premises. Sixty-seven institutions admitted that all cases of whooping cough were not reported, and in reply to an inquiry as to whether a special class for the treatment of whooping cough would be established if permission was granted, fifty-five answered in the negative, forty-six were doubtful, and fifteen were willing to take it into consideration. These answers probably furnish the reason why whooping cough is so prevalent in this city, and why it has thus far failed of administration control. As a result of the investigation, a plan has been evolved for the better supervision and treatment of whooping cough. The department is taking up the matter with the Associated Outpatient Clinics and the hospitals, and it is hoped that before long adequate facilities for the care of those suffering from the disease will be provided.—Editorial Med. Record.

When is the Diagnosis of Tuberculosis in Children Justified?—John B. Hawes, (Boston Med. and Surg. Jour.) May 21, 1914 by tuberculosis under stands a clinical disease with definite symptoms requiring definite treatment. A diagnosis of tuberculosis is rarely justified unless there is a positive skin tuberculin reaction. Constitutional signs and symptoms are usually present and require careful study and investigation. If such symptoms are absent, a definite diagnosis is unwise, although this should not interfere with placing the child under proper treatment. Signs referred to the chest and lungs are of interest and value, if present; if absent, their absence should not preclude a definite diagnosis. If present without constitutional disturbance, one should look for chronic influenza and pneumococcus infections. Positive X-Ray evidence is of value in conjunction with other evidence. Diagnoses based on the X-ray alone are apt to be wrong, and are unjust to the patient.

Scarlatina Treated with Vaccines and the Method of Milne.—E. C. Schultze and L. A. Goldberger attach etiological importance to Micrococcus "S," in Med Rec. which was described by Schultze in 1910. To determine the value of the discovery thereapeutically, they decided to treat all their scarlet fever patients with a vaccine prepared from this microbe. Besides the vaccine injection, all patients received a preliminary course of eight or ten doses of calomel (0.1 to 0.25 gram), and castor oil or magnesium citrate. Their throats were swabbed with a solution of phenol in oil, and their bodies rubbed with a ten per cent. solution of eucalyptus in oil, as advocated by Robert Milne in 1908. On account of a too great absorption of phenol, as evidenced by smoky urine, they found it better to use a five per cent. solution. In 121 of the cases only one injection of vaccine was necessary; in the other seven from two to four injections were given. The reaction was rather striking. The temperature fell by crisis, and not by lysis as described in the textbooks, reaching normal in from twenty-four to seventy-two hours. The general condition improved. In some cases the rectal temperature registered 104 or 105 degrees F. In the 128 cases, there were tow deaths (1.5 pr cent.). One other death occurred, but a complicating meningitis really caused the fatal result. An analysis of the results shows the following: 1. Rapid improvement in most cases, the temperature falling by crisis. 2. Comparatively few complications. 3. Very few secondary contact cases occurred. 4. Scarlet fever could probably be much reduced if all school children were examined by the health authorities at the beginning of each term, and during the school year; cultures being taken from their throats and examined for Micrococcus "S," as well as for Klebs-Loeffler bacilli.

The Prophylaxis of Measles.—J Ruhrah states that an important point in the prophylaxis of measles is the closing of schools in the face of threatened epidemics. In order to be of any service the isolation should be started early, and in order to do this it is necessary to make at least a tentative diagnosis. If measules is in an institution already, or if there is much just outside of it, and there is reason to believe that infection may occur, the children may be examined with reference to several signs, the first of which is loss of weight. This begins as early as the fifth or sixth day before the appearance of the catarrhal symptoms, and generally amounts to about ten ounces for children up to four years of age, and in some cases the loss may amount to as much as three ounces a day The loss is independent of age or the severity of the attack. An examination of the blood will show that during the incubation period there is a leucocytosis. It should be borne in mind, however, that this leucocytosis lasts only into the first day or two of the stage of invasion, when the leucocyte count falls to normal or even below. When the stage of invasion is reached the disease may be suspected if there is fever, especially if accompanied by catarrhal symptoms affecting all or almost all of the mucous membranes. Conjunctivitis, coryza, pharyngitis, and bronchitis are usually all very apparent. In addition, there is almost invariably marked drowsiness. Heim, many years ago, called attention to the odor of measles, which has often been described as like that of a mouse trap, and while there is undoubtedly a more or less characteristic odor about the measles patients, this mouse trap odor is usually due to lack of care and cleanliness rather than anything characteristic of the disease. Two other signs are of value; one, the cyanosis of the tongue which is seen a day or two before the eruption appears, and the other, of the greatest possible value, is the presence of Koplik's spots. These spots sometimes may be seen as early as four days before the appearance of the eruption and usually two days or one day before it appears.

Internal Pachymeningitis in Young Children.—A. Gordon reports in N. Y. Med Jour. two cases of this condition which presented the following common symptoms: Convulsive seizures, elevated temperatures, hypertonicity of the musculature, rigidity of the neck and dorsum, a profound mental hebetude, finally the absence of microorgaisms in the cerebrospinal fluid, which at all times remained clear and transparent and which was under very high pressure. There was hemorrhage into the retina in the first case, but not in the second. In both cases internal pachymeningitis was present, but in the first case there was also a hemorrhage. Apart from the state of the cerebrospinal fluid, all the other symptoms may be also those of meningitis of all varities. In an attempt to find some phenomenon which during life could be considered pathognomonic or at least indicative of internal pachymeningitis, hemorrhagic or nonhemorrhagic, one's attention must naturally be directed toward the condition of the cerebrospinal fluid. Blood may be found in this fluid, not only in the disease in question, but also in case of hemorrhages occurring in the substance of the brain tissue. The peculiar persistence of transparency and clearness of the fluid, and particularly the total absence of microorganisms by direct examination and by culture methods, are the special phenomena on which a diagnosis of pachymeningitis perhaps can rest. The presence of blood alongside of the pachymeningitis may perhaps be determined from the retinal hemorrhages, which have been found by the majority of observers in adults and in children. It is evident that all other symptoms must be taken into consideration, but if in addition the foregoing conditions of the cerebrospinal fluid are found, the presumption is in favor of internal pachymeningitis. The early detection of this form of meningitis will lead to early intervention, either by frequent lumbar punctures, which gave considerable relief to the author's first patient, or by more radical operations of which Haynes's drainage of the cisterna magna appeals most strongly.

Tuberculosis of the Pulmonary Lymph Nodes and Spine Mistaken for Croup.—M. A. Michaelovitch (Pediatria, St. Petersburg, Vol. IV, No. 1) calls attention to the fact that symptoms of stenosis of air passages may be caused by pressure of tuberculous bronchial lympnodes, and it is very important to differentiate stenosis of this kind due to outside pressure and not mistake it for croup. Michaelovitch discusses this question from various points of view, including the etiologic, bacteriologic, pathologic, anatomic, clinical, the course, etc. He comes to the conclusion that frequently, especially when the case is urgent, the differential diagnosis can be partly guessed from the general appearance of the patient, his history, percussion, auscultation, etc., but mainly from the fact that in stenosis from tuberculosis the dyspnea or stenotic respiration occurs during both inspiration and expiration, while in croup it is inspiratory alone. The stridor may increase from crying, coughing etc., and closely resemble that in laryngeal diphtheria. As it is impossible in an urgent case to exclude diphtheria, he recommends as a prophylactic measure intubation and injection of antitoxin. Later, exact differentiation can be made through proper clinical, bacteriologic and especially roentgen-ray examinations.

Surgical Diseases of Childhood.

Under the Charge of

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Pyloric Stenosis in Infants.—Dr. James F. Mitchell, of Washington, D. C. stated before the Southern Gynecological Assn. (N. Y. Med. Jour.) that autopsy reports and operation protocols were uniform in their description of a pyloric tumor which was always present, hard, and free from adhesions to surrounding parts. The whole pyloric stem was thickened and in cases of long standing the stomach might be dilated and its walls hypertrophied. On inspection, the pyloric thickening was found to be due almost entirely to an enormous development of the circular muscle fibres, an increase in both size and number. The lumen varied, but in marked cases with difficulty admitted the finest probe. The etiology was purely speculative, the two leading views being, first, that it was a congenital anomaly which progressed after birth, and secondly, that there was some primary irritation with consequent spasm and hypertrophy. Kaupe, in 1909, after a careful study of 346 articles bearing on this point, concluded that the etiology was still a mystery.

The clinical picture was well established and so characteristic that, having seen one typical example, a second was not likely to be overlooked. The diagnosis in his second case was made by the attendent who had observed the first in its hospital course. Nearly all were described as having been healthy at first; eighty per cent, boys, and the majority first born and breast fed, although Rammstedt had recently reported an operative case, which was in the third child in one family to have the same condition.

In many cases a hard tumor could be palpatated at the site of the pylorus. This observation varied with different reporters from twenty-five to seventy-five per cent. He could not definitely feel a pyloric tumor in any of his three cases examined without an anesthetic. The diagnosis could usually be made on the foregoing signs and symptoms; but it must be remembered that these varied with the degree of stenosis and that in consideration of the treatment, pyloric spasm without stenosis should, if possible, be excluded. The bismuth radiograph was of great assistance in the diagnosis. Surgically, various precedures had been used, such as pylorectomy, divulsion, pyloroplasty, and gastroenterostomy. It was generally conceded that pylorectomy was too formidable. Divulsion offered evident difficulties. The ordinary pyloroplasty was unsatisfactory because of the unyielding structure of the pylorus, and Finney did not consider his opperation applicable. In this country posterior gastroenterostomy had been so universally employed as to be looked upon as the operation of choice. His own experience had been limited to three cases. All came to operation early, only one baby having reached any degree of emaciation, weighing five pounds, six ounces, a loss of over three pounds since birth. Two babies were operated on at seven weeks and the third at six weeks of age. A posterior gastroenterostomy was done in each instance. The pylorus always presented the typical stony hard olive shaped tumor with apparent occlusion of the lumen. They were now healthy, normally developing children, three and one half years, two and one half years, and eight months after operation.

Fracture of the Pelvis in a Child.—P. G. Skillern (New York Med. Journ., Nov. 8, p. 907). A boy, aged 7, while at play the day previously, was struck by an empty limebox over the pubic region. Examination revealed ecchymosis between the anterior superior iliac spines and the symphysis pubis and "winching" tenderness over the ossa pubis. There were no signs of injury to the bladder. The child could walk without difficulty, and complained of nothing except tenderness on palpation. Bimanual recto-abdominal palpation, in which the pubic arch was sandwiched between the fingers of the examining hands, again elicited "wincing" tenderness but no unevenness on the surfaces of the bones, no crepitus, and no preternatural mobility. There was a small hematoma in the space of Retzius. A skiagram showed bilateral symmetrical oblique lines involving bodies of pubic bones, each starting at upper part of symphysis and extending downward and outward to the thyroid foramen below the pubic crest. On the right side the fracture line passed across the lower part of the thyroid foramen to involve the body of the ischium just above its junction with the tuberosity. The patient was placed at rest on a fracture bed.

These lines of fracture are in keeping with the following description by Packard. "When a crushing force is brought to bear upon the whole pelvis, the bone may give way at two or more different points. One or the other side may be specially acted upon. In any case however, the pubis would seem to yield first, in its horizontal ramus, when there must be a fracture also somewhere between the symphysis pubis and the tuber ischii."

Fracture of the pelvis in childhood is rare because of the smallness and elasticity of the bones and because of the suppleness afforded by the symphyseal and epiphyseal buffers. The force in this case was sufficient to overcome the resistance offered by these factors, but stopped short of crushing and displacing the bones. The absence of symptoms is attributable to the subperiosteal nature of the lines of fracture, there even being insufficient displacement to involve the bladder (which may have escaped because it is chiefly an abdominal organ in childhood) or stretch the triangular ligament and rupture the urethra. Had not the ecchymosis and "wincing" tenderness aroused suspicion of fracture sufficiently to resort to the X-rays the fractures doubtless would have been overlooked and treated as a contusion.

Tonsillectomy in Children.—B. Riedel (Munchner medizinische Wochenschrift, Vol LX, No. 41) declares that he had rather remove the gall-bladder, the appendix or an ovarian tumor, than operate on a small, firmly embedded and friable tonsil. Tonsillectomy under such circumstances is a serious operation and requires general anesthesia. With ordinary, enlarged tonsils local anesthesia may suffice even for children, but he has never attempted it as he dreads the child's crying. The general anesthesia has to be profound for a short interval which, of course, is not without its dangers. The blood swallowed during the operation may be vomited afterward and give cause for alarm, as it is supposed to be the dreaded "hemorrhage." He has known of the pillars being sutured together on this account when there was really no tendency to hemorrhage. He has attempted tonsillectomy a few times in acute tonsillitis but found the tonsils too soft and friable to be moved. He says in conclusion that an imperfect operation is worse than none. A diseased tonsil must be removed in toto, down to a small bit of sound tissue which he always tries to save. He prefers a stout, unbendable, heavy and straight clamp, 22 cm. long and 5 and 13 mm. broad, with three teeth. This leaves his right hand free for the knife.

Technic for Tonsillectomy.—G. Trautmann (Munchner medizinische Wochenschrift, Vol. LX, No. 40), insists that the tonsil capsule should be removed with it, that is, the sheet of connective-tissue that encloses the tonsil on the outside. The portion of the tonsil toward the mouth extends beyond the capsule, which only covers the side. The front of the tonsil is covered with what he calls the prepuce: it shows up when the root of the tongue is depressed with a spatula. The anterior pillar of the soft palate from the tongue like a flag-staff and the prepuce spreads from it above like a flag on its standard. He gives several illustrations to show conditions and the advantages of obtaining access to the tonsil by a curving incision through this prepuce; this exposes the tonsil and also its capsule and permits the whole to be easily shelled out with the finger or a blunt instrument. He warns expressly against using a cutting instrument. The tonsil is taken out through the incision, not directly into the mouth; by this means all danger is avoided of injuring the veins. The vessels severed in the operation retract at once and as they slip back into the stout muscles forming the tonsil recess they became compressed so that there is no danger of hemorrhage. If there should be hemorrhage the tonsil cavity being so amply exposed by this technic renders it a comparatively easy matter to arrest the bleeding.

A New Treatment of Poliomyelitis.—By Moulton. Cal. State Journal of Med., Feb., 1914. Dr. Roy Bernard of Chicago devised a new treatment for poliomyelitis which the author has employed with astonishing results. It aims to secure an increase of blood supply, and of nutrition in the part of the cord involved by the disease. This is done by causing extension of the spine by suspension on a belt, or by raising the spine with the hands as the patient lies prone on the back. If the legs are involved the belt should be passed beneath the 9th, 10th, and 11th dorsal vertebral, and the body raised until it hangs suspended on the belt. This causes extension of the spine at the site of the lumbar enlargement of the cord and thereby attaches the cord at this point. In cases of paralysis of the arms the spine is raised by the fingers beneath the second to the fifth clerical vertebral. Treatments are given every second or third day and last several minutes at a time. The author reports marked improvement and even complete cure, after one or more months of this treatment.

Scoliosis by Malformation of the Fifth Lumbar Vertebra.—Marie Nageotte-Wilbouchewitch (Arch. de med. des enf., Jan., 1914) says that the form of scoliosis which is shown by radiography to be due to a malformation of the fifth lumbar vertebra was not diagnosticated before the use of the X-ray in examination of scoliosis. She cites a case in which the fourth and fifth lumbar vertebrae were markedly altered, the fifth being entirely flattened to the left. Thus a double curvature results to compensate for this wedge-shaped loss of substance. Cases of this kind are shown by radiography not to be rare. The malformation of these vertebrae is the key to the resistance of these serlioses to the ordinary methods of treatment. The author gives plates of a case in which there was shortening of the right leg due to a tuberculous knee, in which this wedge-shaped deformity was found. This case was made perfectly comfortable and the curvature was straightened out by placing under the shortened leg a high sole sufficient to give perfect equilibrim. The lumbar spine, previously rigid in standing, now became normally mobile. The author believes that the proper treatment of such cases is simply to raise one foot by a high heel until the tiling of the pelvis renders the spine straight. If we should apply the usual treatment of rest, no improvement would result in the deformed vertebra and the health would suffer from confinement. Neither would exercise be likely to benefit these cases. The author thinks that in young children in whom ossification was not advanced, this tilting of the pelvis might possibly do harm by displacement of the pelvic organs; but in older children it does no harm. This treatment is rational, since the weight of the body would tend to cause the reshaping of the wedge-shaped vertebral mody.

Spinal Changes in Pseudohypertrophic Paralysis.—In examining the tissues of a boy of fifteen who had developed pseudohypertrophic paralysis at the age of seven, A. N. (Edin Med. Jour., 1914, xii, 42) found marked fatty infiltration of the muscles. There was proliferation of the sarcolemma nuclei, with atrophied, normal, and hypertrophied fibers, central nuclei, and considerable fatty infiltration and increase of the connective tissue. Many cells in the anterior horn of the spinal cord were reduced in size and some shrunken. Chromatolytic changes were only found here and there. In most cases the cells contained well-strained Nissi granules, which were present even in the shrunken cells. Increase of pigment in the cells was not observed. The actual number of nerve cells present was diminished by about one-quarter, but those remaining were either entirely normal or presented an appearance characteristic of diminished function, i. e., they were small, but possessed Nissi granules and processes. There was a slight increase in the neuroglia in the anterior horns, undoubtedly secondary to the diminution in the number of the nerve cells. The atrophy and diminution of these ventral horn cells corresponded to the atrophy and diminution of the fibers in the anterior nerve roots, and on examining the nerve trunks in the muscles themselves similar changes were found, the fibers staining poorly, especially the myelin sheath, some being atrophied and the connective tissue in the sheath being increased. There was no evidence of any inflammatory process in the nerve sheaths. The pathological findings in this case are in favor of the view that the slight changes present in the spinal cord were merely secondary to the changes in the muscles.

Orthopedic Surgery

Under the Charge of

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The Treatment of Congenital Club Foot.—By James K. Young, The Med. Council. June, 1914. Great advancement has been made during the last ten years in the treatment of this deformity, and a cure can usually be effected. Treatment should be instituted immediately, after birth. Daily massage and manipulation to bring the feet into correct position, should by the application of a bandage in a light splint to maintain the correction. After these procedures have been faithfully followed for six months to a year operation must be performed unless cure has been effected.

The simplest measure to be employed is forcible stitching of the foot with division of the contracted tendons and planta fascia if necessary. The position of the foot must be overcorrected at the time of operation, and then dressed in plaster. The plaster casts may be removed after a few weeks and club-foot walking shoes worn.

In some very severe cases the author thinks that Astragalectomy is indicated. But early treatment carried out as above disected will obviate any necessity of this operation.

Likewise tarsectomy, or the removal of a wedge-shaped piece of bone from the outer side of the foot is rarely necessary. Following operation massage, manipulation, and corrective exercises must be employed to maintain a correct position of the foot, to increase its flexibility, and to strengthen the weakened muscles.

Treatment of Curvature of the Spine.—By the family physician, By J. J. Nutt, The Med. Council, June 1914. The family physician can do much for these cases of spinal curvature when it is impossible to refer them to the orthopedic surgeon. The three objects of treatment are to to correct the deformity, to strengthen the weak muscles of the back and to re-establish the muscle sense that tells the patient when the back is straight or crooked.

If the curve is not a fixed one, tilting of the pelvis will alter it. If the pelvis is raised in the side of the convexity of the curve, the spine tends to straighten. This result may be secured raising the sole of the foot in that side, and by fastening a hair pad within the underclothing so that it is beneath the tuberosity of the ischium when the patient sits. The exact amount of correction thus secured and the amount of tilting of the pelvis required to get the best correction must be carefully ascertained by observation of the naked back.

Next the contracted muscles on the concave side of the back must be stretched daily. This is best done by hanging by the hands from rings. The ring in the concave side should be two inches higher than the other. This exercise must be taken three times daily for increasing lengths of time.

The patient should avoid fatigue during the day as it increases the deformity. There should be a rest hour in the middle of the day during which she reclines completely relaxed on her back on a hard level surface without a pillow.

Morning and night she could stand nude before a long mirror and endeavor to bring her body into a correct position. A plumb line dropped from the center of the mirror above should pass through the nose, chin, interclavicular notch, and umgilicus of the image. The shoulders should be made even, and the out line of the waist and hip on each side alike. She should then close her eyes and try to "sense" this correct position, and thus re-educate the sense of muscle balance. When standing, the patient should attempt to raise herself to her greatest height by drawing in the abdomen, raising the chest, and holding back the chin.

Out-door exercise and life and regular habits are of the greatest value.

Concerning Ununited Fractures.—By Jas. T. Watkins, Cal. State Jour. of Med., May, 1914. The author considers first normal osteogenesis and then endeavors to learn what are the conditions that prevent bone regeneration after fractures.

Repair of injuries to the shafts of long bones takes place through a transition stage of cartilage. The cartilage cells are then absorbed but their nuclei are transformed into osteablasts that rapidly proliferate. Pressure restricts this proliferation. Bone growth occurs in the line of least resistance. As regards the function of the periosteum there is the widest divergence of opinion, and the question is not yet settled. The main blood supply of the long bones is through the nutrient artery although the subperiosteal vessels also furnish some nourishment directly through the terminals of the Haversian canals.

Conditions which may interfere with union are the following: undue pressure from dressings, interference with the blood supply through injury to the nutrient artery in stripping up of the periosteum, interposition of periosteum and soft parts between the fragments, loss of alignment with overlapping of fragments, suppuration, and possibly disturbance of nerve supply. To these may be added certain constitutional diseases. Next are mentioned the various means of securing union in a case of delayed or non-union as advocated by Jones, Lane, Murphy and others.

Massage and Movements for Certain Affections of Muscles and Ligaments.—By W. P. Herrick, Am. Jour. of Surg., June, 1914. The author urges the use of massage and movements as valuable aids in the treatment of certain conditions. They aid impaired nutrition and functionfi hasten repair, and prevent deformity. They are applicable in traumatic conditions of muscles and ligaments, such as contusions, rupture of muscle, fibers, myositis,, and sprains; in impaired development and function of muscles and in relaxation of ligaments; and in disturbed innervation of methods of physical treatment are two little underwood and employed by the physician and surgeon.

A Contribution to the Study of Iinfantile Acromegaly.—By L. Babonneix and G. Paisseau (Gazette des Hopitaux, 24th May, 1910).—Acromegaly in childhood is a rare disease. In this paper the authors record case which they have recently observer, and review the literature of the subject. In all, they are aware of but a score of authentic cases.

Their patient was 13½ years of age, and the child of apparently healthy parents. During the first few years of life he developed fairly normally, but after that mental symptoms insidiously manifested themselves. He was apathetic, sleepy and dull, and so backward that he could not be brought to read or wright. It was only, however, when the occurrence of serious ocular symptoms finally stirred up the parents that the child was taken to see a physician. By this time, the physiognomy of the disease was so striking as at once to attract attention. The head was greatly increased in size, especially antero-posteriorly, and the occipital protuberance and mastoid process were very large. The hypertrophy of the face was even more striking; it was elogngated, with a low, receding forehead, and prominent orbital margins. The eyelids were thick and heavy looking, the nose thick and prominent, while the chin projected downward and forwards, so as to increase still more the length of the already massive face. The lips were large and thick, and the tongue was more than double its normal volume. Deformities of the rest of the skeleton were less striking. The hands and feet were only slightly increased in length, but were thickened and shortened. There was a decided tendency to precocious obesity, especially of the trunk and thighs. The knee-jerks were exaggerated. Babinski's sign was present, and ankle-clonus was easily elicited. The abdominal and thoracic organ appeared to be normal. Examination of the eyes yielded valuable information. There was an interstitial keratitis, clearly of congenital syphilitic origin, and well-marked concentric constriction of the visual field, due, no doubt, to pressure on the optic chiasma. Mentally, the patient was imbecile; his speech was slow and hollow, his movements clumsy and awkward, and he frequently passed urine and faeces in bed.

The diagnosis in this case was never in any doubt. The obvious increase in size of the extremities, the macroglossia, and the disordered intellect constituted a symptom-complex which could hardly be attributed to any other disease. The picture was completed by the presence of concentric narrowing of the visual field, and by the skiagraphic demonstration of enlargement of the sella turcica.

The authorors give a fairly detailed survey of the literature of the subject, and the following are the more important points to which they draw attention:—

Acromegaly may occur at a very early age, as in the case of Field (British Medical Journal, 1893, vol. ii, p. 14), where characteristic symptoms presented themselves at the seventh month. It frequently occurs in association with other diseases—diabetes mellitus, diabetes inspidus, syringomyelia, Graves' disease, myxoedema, hysteria, Little's disease, &c.; and there is at least one other case (Pel Berl. klin. Woch., 30th October, 1905), in which it occurred in a patient the subject of hereditary syphilis.

The relationship of acromegaly to certain developmental faults, especially congenital hypertrophy and partial gigantism, is discussed at some length, and the difficulties of diagnosis are pointed out. With gigantism especially acromegaly is closely allied. For many years gigantism was looked on as acromegaly of childhood, both states being held to be due to the same cause— viz., a lesion of the pituitary body. Thus, in gigantism, the epiphyseal cartilages not being joined on, the bone grew in length, where as in acromegaly these same cartilages were ossified and growth took place subperiosteally with increase in breath of the bones. The occurrence of cases of true acromegaly in childhood shows that the first of these theories is not in accordance with facts, while the second, which is sometimes expressed thus—tumor of the hypophysis acromegaly—is also liable to many objections. Not only do some cases of hypophyseal tumor run their course without being complicated by acromegaly, but in other instances acromegaly or partial gigantism may result from lesions which do not involve the pituitary body. The latter event occurs in cases of tumors involving the pineal gland.

BOOK REVIEWS

The Treatment of Diseases—A Manual of Practical Medicine, by Reynold Webb Wilcox, M.A., M. D., LL.d., Professor of Medicine, (retired), New York Post-Graduate Medical School and Hospital; Visiting Physician, St. Mark's Hospital: Member of the Committee of Revision of the Eighth (1900) Decennial Revision of the U. S. Pharmacopeia. Fourth revision, thoroughly revised and enlarged. Price $6.00 net. P. Blakiston's Son & Company, 1012 Walnut Street, Philadelphia, 1914.

Frequent revisions of text-books on the "Treatment of Diseases" are necessary in order to be kept abreast with advanced teaching. To those familiar with the first editions of this work on the "Treatment of Diseases," this edition needs no commendation, other than the assurance that it has been thoroughly revised and brought up-to-date. Dr. Wilcox's book is really broad enough to be called a "Practice of Medicine," while the sections on Treatment are much amplified as compared with the conventional Practice. Etiology, Pathology, Diagnosis, Prognosis and Symptoms are discussed before treatment is considered. Practical medicine might have been a better title for the work than the one selected by the author.

The style of the book is exceptionally clear, concise and interesting. Hardly more than half a dozen pages are devoted to any one disease, and yet the essential points of each disease are fully given. The modes of treatment are brought down to date and the author gives the dietetic and general rules of treatment with exceptional fullness. The book is not an extended treatise for the specialists, but the general practitioner will find it a most useful work, not only as a reference book upon the rarer diseases, but also as a work which he will wish to consult frequently in the diagnosis and treatment of common diseases.

In the light of the author's purpose to meet the practical needs of the physician the book inpresses us as a wholly adequate performance. Its eminently practical character should render it peculiarly acceptable to the general practitioner. Thus, under Indicanuria, an exceedingly simple test is described and the more elaborate ones entirely ignored. The author believes there is an anxious endeavor on the part of the physician to increase his knowledge of therapeutics. The therapeutics awakening, which is now being experienced shows that more, today, than ever before is expected of the clinicians and with the practical needs of the physician always in view, the author has written especially for his benefit.

From the literary standpoint, the excellence of the text is beyond criticism. The author's intimate knowledge of his subject, his exceptional training in the tributary sciences, his store of well digested clinical data, and the judicial manner in which he handles disputed questions combine to place him in the front rank of modern clinicians and therapeutists.

The printers and publishers realize the great worth of the volume and give it all the art in bookmaking for which they are famous and turn it from their press rooms on elegant paper and in a handsome cloth binding to stand daily use.

Infant Feeding. By Clifford G. Grules, A.M., M.D., Assistant Professor of Pediatrics at Rush Medical College, Chief of Pediatric Staff, Cook County Hospital. Second Edition, Thoroughly Revised. Octavo of 314 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, $3.00 net.

This work is the outcome of a course of lectures delivered during the past three years to the students of the Rush Medical College and their demand on the author for a reliable trustworthy guide to infant feeding is, in part, responsible for the appearance of this work. In the preparation of this volume the author has endeavored to do two things, first, to bring the knowledge of the scientific process of infant feeding abreast with the latest and most modern methods, and second to put forth the practical application of these principles in such a way that they can be easily and readily grasped by the general practitioner. In this he has not fallen short of his original intentions and to sum up in a few words, this work is the last word on infant feeding.

After reviewing the scientific principles bearing on the question, the author goes into the actual application of these principles. He does this in such a clear, simple way that his meaning in every instance is at once apparent. The articles on the breast and breast milk, the technic of breast-nursing, and the nutritional disturbances of the breastfed infant you will find of daily service. Nowhere else, in any language, can you get the information this book gives you. Artificial feeding, again, he presents it in the same forceful, definite way, giving a number of simple formulae.

This edition has been revised especially from the accumulation of scientifiec facts which the last two years have brought forth. While nothing has been presented during this time which would revolutionize our ideas on the subject of infant feeding, at the same time there has been a gradual accummulation of scientific data, which has added materially to the scientific knowledge of infant feeding. The author has embodied, as far as practicable, the latest scientific facts without disturbing the text of the former edition. The illustrations, particularly those in color showing the actual shapes and appearances of normal stools and those of diseased conditions, are worthy of your special consideration. It is a work that should be in the hands of every physician who is called upon to give advice where the subject of feeding babies and children is concerned. It is a pleasure and a duty to commend this volume to the professor.

Puericulture et Pouponniere par le Dr. R. Raimoindi; Libraire J. B. Bailliere et fils, 19 rue Hautefeuille, a Paris.

Dr. Raimonindi has written an interesting little book in which he discusses the great value of the Pouponniere as the best means of not infrequently preserving infant life. Literary translated, he says: "We designate a pouponnaire as an establishment in which one rears, under medical supervision, the child from his birth to the period of the eruption of his twentieth tooth." Puericulture is a word applied to those institutions outside of the larger cities, where all that is scientific in medicine is applied for the welfare of the baby. Infant feeding is well discussed, and the selection of special cows to furnish the best possible milk, the quantity of food given, the exacting care exercised in the washing of the bottle and the treatment of the nipple indicat how scientific is the method adopted for care of the poor child in some of the French cities and towns. Parents have certain hours when they can see their offspring; and much detail is given as to the requirements of the nurse; indeed the rules set down for the government of the nurses are quite extreme. The toilet of the baby is interesting and valuable, and one notes exactly how the little one is attired in these institutions, including even the gloves that are frequently worn in-doors as the child often from illnourishment has cold extremities. An interesting chapter is devoted to the "Fonctionnement du Pavillion D'Enseignement," in which is discussed the training of special students for the work required in nursing these children. They have a course of study to pursue, including laboratory work and live during this time in this pavillion or home. The little book which contains a wealth of information, is printed in good clear type and consumes less than one hundred pages of text. James K. Young, 222 S. 10th St., Philadelphia.

Diseases of Children—A Manual for Students and Practitioners. By John McCaw(M.D., R.U.I., L.R.C.P. (Edinburg), etc.; Senior Physician, Belfast Hospital for Sick Children; Clinical Teacher of Diseases of Children, Queen's University, Belfast; Lecturer and Examiner in Queen's University, Belfast, 1913-1914; Ex-President Ulster Medical Society; ExPresident, Belfast Division, British Medical Association; Author of "Aids to the Diagnosis and Treatment of Diseases of Children," "Aids to Infant Feeding and Hygiene." Price $3.50 net. New York: William Wood & Co., 1914.

The study of ailments of children is becoming more of a specialty year by year and the difficulties to be met and overcome in acquiring a competent acquaintance on diseases of infancy and childhood are many and considerable, but which can be mastered with patience, practice, and a careful study of the subject. Very few of the recent works on diseases of children have been so ably written for special reference to the practical demands of the student and general practitioner as has this volume of Dr. McCaw's. The author's long experience as a physician to the Belfast Hospital for Sick Children and his clinical experience as teacher of Diseases of Children in Queens University at Belfast have served to give him a special insight into the subject. The author believes that one of the first perquisits to a student of Diseases of Children is attendance in the wards and out-patients departments of a well equipped Children's Hospital, where he may be taught how to examine and told how best to cultivate and apply his powers of observation, and to learn to use his eyes more than his hands, and his ears more than his tongue.

The book before us is not as large as the average single volume text-book. Nevertheless, while it is concise, yet it is complete in its details. The chapter on Infant Feeding deserves more than passing commendation, since it contains a clear explanation of the many different methods of Infant Feeding and serves to point out the special indications and relative value of the many methods now in vogue. The chapter on special fever is an unusually good one, and the author shows in minute detail the differential diagnosis of the many acute infectious diseases common to infancy and childhood. The author has certain well-grounded views with respect to the prolaxit administration of antitoxine.

The volume closes with a section entitled, "General Information in which the author calls a special atention to Anatomical and Physiological points, pertaining to the child, its growth and development, various tables on the teeth, incubation periods, eruption periods and quarantine, the description of the various diagnostic methods, dosage, etc. The work contains a number of excellent plates and every illustration in it is well written, the type being clear to the point.

We are pleased to see that the subject of treatment is given a greater share of attention than usual in the average text-book on Diseases of Children. The author has written this book primarily for the Student and General Practitioner, in both of whom he hopes to encourage a further study of Diseases of Children by consulting the larger text-books on this subject. The book may be safely recommended without reserve, as a valuable guide to a better understanding of this subject.

Treatment of Tuberculosis. Ordinary Therapeutics of Medical Men. By Albert Robin, Professor of Clinical Therapeutics at the Paris Faculty of Medicine, etc. Translated by Dr. Leon Blanc, Physician at Aix-les-Bains, etc. With the Assistance of H. de Meric, Surgeon to the French Hospital, London. New York: The MacMillan Company. 1913. Price, $5.25.

Prof. Robin divides his work into six parts, as follows: I. The Soil of Pulmonary Tuberculosis and Important Indications as to Treatment. II. Hygiene and Alimentation. III. Treatment of Pulmonary Phthisis. IV. Treatment of Tuberculosis According to Age and to the Associated Morbid Conditions. V. Treatment of Extra-Pulmonary Tuberculous Affections. VI. Social Defence against Tuberculosis. One is impressed with the broadening effect obtained from reading this volume. Upon the treatment of such tuberculous lesions with which we have been fairly well satisfied or rather with which we have felt content that the recognized treatment was well established, much additional knowledge is given. Without enumerating them individually, all forms of treatment have been considered from every standpoint. In some chapters the author has a peculiar method of giving all the arguments pro and con of certain debatable therapy and then a conclusive summary with convincing proof setting forth the indications for the particular treatment under discussion. All the later methods of therapy, with most of which the author has had personal experience, are given considerable space. This volume serves as a complement to recent treatments of tuberculosis, and is worthy of recommendation on account of the different views, as well as the wealth of facts expressed by one of the greatest French authors on the subject of tuberculosis.

The translator has conferred a great service upon Medical Men of English speaking countries of the world by translating Prof. Albert Robin's work on Tuberculosis. It is a handsome quarto volume of 160 pages, giving the French version on the subject of Tuberculosis up to the present year. The volume is unique from a number of standpoints, viz., in the manner in which the subject matter is developed and the many unusual and yet plausible French views on the subject of Tuberculosis, most of which have never before appeared in either German or English literature. While the work is lacking in plates, diagrams, and illustrations, which to Americans may be considered a fault, yet the simple, direct, and convincing descriptions make up in part for these defects. This work is unquestionably one of the best text-books on Tuberculosis that has appeared in a long time. The reader will find in it excellent discussions, especially on the management of Tuberculosis.

Heart Disease Blood-Pressure and the Nauheim Treatment—By Louis Faugeres Bishop, A.M., M.D. Clinical Professor of Heart and Circulatory Diseases, Fordham University, School of Medicine, New York City; Physician to the Lincoln Hospital; Late Chairman of the Section of Medicine of the New York Academy of Medicine; Member of the American Medical Association; American Therapeutic Society; New York Pathological Society; Alumni Association, St. Luke's Hospital, etc. Fifth revised edition. Cloth $3.00 net. Funk & Wagnals Company, New York and London.

Dr. Bishop's work, "Heart Disease, Blood-Pressure, and the Nauheim Treatment" has met with phenomenal success since five editions have been called for within six years, and since its publication no work has appeared to replace it. The author does not present this work for the heart specialists, but has written it more particularly for the general practitioner, supplying information required in the management of heart disease and arteriosclerosis, which has heretofore, not been conveniently available. The author also describes very minutely and accurately the Nauheim Treatment.

The subject of Blood-Pressure and its general considerations and treatment are treated in the most satisfactory and masterly manner. Constitutional low arterial tension is also most satisfactorily considered. In the revision for this fifth edition, the author has very carefully gone over his work and made additions wherever the same was considered necessary. A chapter is added on the consideration and use of Blood-Pressure instruments. Many reallly serviceable illustrations are of great assistance in elucidating the text. One cannot read this work without being better prepared to give competent advice in diseases of heart and blood-pressure, and it is a pleasure to commend this work.

PEDIATRICS

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EDITORIAL

INTESTINAL DISTURBANCES IN INFANTS

In a recent issue of the Berliner Klinische Wochenshrift Salge, in discussing the intestinal disturbances of infants, divides them into those which may be due to the diet as such, and those which arise as a result of bacterial invasion.

Dyspepsia, he says, is produced by the ingestion of more food than the digestive processes can take care of, either too large feedings being given, or the interval between is far too short. Owing to this disproportion between the amount of food ingested, and the digestive powers, chemical changes take place in the contents of the alimentary canal which becomes pathological and irritates the mucous membrane, producing vomiting and diarrhea.

Besides the obvious prophylaxis of care in apportioning the food, the author advises for treatment of this dyspepsia, starvation for twenty-four hours on a weak infusion of Russian tea, sweetened with saccharin instead of sugar. If the symptoms do not yield to this treatment, calomel may be given in doses of 1-3 to 3-4 gr. at intervals of two hours for three times. Milk diet should not be resumed at once when the stomach and intestines are emptied but some starchy diet substituted. The author recommends Soxlet's nutrient sugar, a soluble preparation of malt and dextrin, to be used in 5 per cent. solution for very young infants. For older babies pure oatmeal or cornflour may be used. Within three days the stools should be semi-solid and of a dark brown color, when the milk may be cautiously resumed. If the vomiting and anorexia continue, the motor functions of the stomach should be investigated. The child should be given a meal adjusted to its weight and age, and the evacuation examined for undigested food and free hydrochloric acid. If the stomach is not empty and contains no free hydrochloric acid it should be washed out with a one per cent. solution of Carlsbad salts. In obstinate cases pepsin and HCl may be of use, or a mixture of 1 gram of liq. strychnini, 2 grams of fluid extract of condurango, and ten grams of tincture of rhabarb may be given in doses of five drops each, fifteen minutes before a feeding, three times a day.

Infantile enteric catarrh generally occurs as a sequel of the dyspepsia, with thin, watery stools, very acid, and very ill smelling. The bad results upon the general health are not slow in appearance, and wasting sets in. The respiration is deep, difficult and frequently sighing, the pulse irregular and small. Vigorous children often exhibit a high fever which may be lacking in those of weaker constitution. The great danger to life in this condition is in collapse, and the best means to combat such a tendency is the hypodermic injection of comphor in an initial dose of 0.1 to 0.2 gram, half the dose repeated at two hour intervals. A very little tea may be given by mouth, and the body supplies with water by subcutaneous injections of saline solution, 150 c. cm. twice a day. Cold wet packs may be employed to reduce the fever, and fats should be eliminated. The best food is mother's milk with the fat taken out. If this cannot be had, thin barley water or other similar starchy preparation may be used. The author reports some cases in which good results have been obtained by giving good full milk warmed to 40 degrees, C. and treated with pepsin, the amount of the latter, however, being double that usually indicated.

THE TREATMENT OF EARLY TUBERCULOSIS BY INTENSIVE NASCENT-IODINE ADMINISTRATION

The treatment of tuberculosis by intensive nascent iodine administration was first practised by Dr. Carle of Glasgow who wrote concerning the form of treatment in the practitioner, Dec., 1912. Since that time the method has been used largely and with a considerable amount of success in different parts of the world. In the Practitioner, June 1914, Dr. Reeve writes of the success that he has had in treating early cases of tuberculosis in this manner and especially in the instance of childien with enlarged glands. The important germicidal effects of iodine have been employed with much success in the intensive application of this element in its nascent state within the tissues of the body. According to Practitioner, June, 1914, Dr. Dally, when iodine is absorbed from the lymphatic system or from subcutaneous connective tissue, it always meets with an alkaline carbonate, and thus the iodine and iodate are formed. These two bodies circulating in the blood stream necessarily yield up nascent iodine in tissues which have an acid reaction and accordingly the first effect is to produce an irritant reaction in the neighbourhood of any infective focus in the body. A localized inflammation is set up as the periphery of such focus, wherever it may b , and a considerable amount of cell proliferation occurs. Unlike any other element iodine changes from one compound to another, and from one group to another, so long as the surrounding conditions offer any possibility of its so doing: its therapeutic activity probably rests upon this fact. Disassociation takes place, and the iodine, entering into ready chemical combination with the alkaline bases of the blood exerts a well-marked influence upon cellular metabolism, without strikingly toxic effects, since the high solubility and diffusibility of the salts of iodine render its excretion by the kidneys both easy and rapid.

The special reducing agent used in this treatment in order to liberate nascent iodine from the iodide in the blood and tissues consists of chlorine in carefully prepared aqueous solution the constituents being chlorine and some of its oxides, together with potassium chloride. Just as iodine is held in stable solution by the iodide present in solution, so is chlorine held in like manner by the chloride. By the agency of chlorine nascent iodine is set free intensively from the iodide in the blood in proportion to the amounts of chlorine solution necessary. Upon the leucocytes nascent iodine has a stimulating effect, both increasing their numbers in the blood and at the same time hastening their migration from the vessels into the surrounding tissues. Catalysis follows, any necrotic material first becoming liquefied and then being either cast out or absorbed. A vigorous reaction goes on, especially during the first week, attended by slight rise of temperature and some degree of iodism which varies greatly in extent with the individual and with the amount of pathological tissue present. After the initial reaction has subsided, the nascent iodine continues to exert its powerful germicidal effects and it is to those that the great value of this form of treatment in pulmonary tuberculosis is due. Dr. Reeve is enthusiastic with regard to the treatment of strumous children by intensive nascent iodine administration. Of course, experience with the use of this means of treatment has not been sufficiently long to warrant the expression of definite statements as to its value; however, all those who have followed the method carefully appeared to be convinced that the therapeutic effects are marked.

THE COW AS AN AGENT OF DIPHTHERIA INFECTION

It has long been a matter of common knowledge that milk affords a convenent vehicle by means of which infective germs may be spread, and many serious epidemics have been disseminated by the agency of infected milk. Recently the cow itself has been brought under suspicion as the originator and disseminator of diphtheria. A report was issued a short time ago by the English Local Government Board regarding a somewhat wide spread outbreak of diphtheria in the neighborhood of London. After careful investigation, carriers and other possible modes in which the milk may have become infected seem to have been eliminated and it was found that five of the cows at the farm from which the infected milk probably came, had irregularly shaped sores on their udders and teats which appear to have infected the fingers of three milkers. One finger was so badly infected that recourse was had to amputation and from it and another of the sore fingers virulent diphtheria bacilli were obtained. Unfortunately the investigators did not see the sores on the cow's teats until they were practically healed nor was the milk examined until the external lesions were healed.

While it has not been definitely proven that the cows themselves spread the infection suspicion seems to point in that direction. The suggestion has been made on more than one occasion, when an outbreak of diphtheria has occurred without any trace of its origin having been discovered, that cow infection may have been the cause; at any rate, the suggestion is worthy of note and when suspicion arises it would be well to introduce the bacteriologist to the cow as quickly as possible.

THE COST OF CHILD LABOR

In spite of all the agitation and legislation the child labor problem still confronts the public. and is likely to until there are enlisted in its solution not only philanthropists and altruists but also the rank and file of the country's population. Perhaps no more effective way of securing this co-operation can be hit upon than by bringing to the front the economic aspects of the period when they should be developing the forces which would make them profitable members of the community in adult life. The absolute folly of this expenditure of energy is shown by the fact that even disregarding its ultimate loss it brings no present gain to the child's family. That is, in trades where it is possible to use women and children, the entire earning capacity of the family is no larger than is that of the man alone in those trades where only men can be employed—a fact fraught with far-reaching significance for the thoughtful.

And for this mere semblance of gain, empty of reality, is bartered the future of the community.

The laws, pitifully inadequate as most of them are, uninforced on one hand and evaded on the other, and children far below the legal age of 14 years toil day after day, not only for the "12 hours a day or 60 hours a week," which the Pennsylvania law for instance, permits, but anywhere up to 68 hours in one week, and sixteen consecutive hours in one day. Night work, and night alternating with day work, so that even if strength permitted, the child can attend neither day nor night school, add their quota to the list of disastrous influences.

In the northern states much horror has frequently been expressed at the conditions in southern mill towns, but there is no need to cross Mason and Dixon's line to find painful realities. A recent number of Charities contains an article fairly but graphically depicting the state of more than 20,000 of the children of Pennsylvania, and that other northern states can furnish similar examples there is little doubt. The writer recently attended a New Years "party" at a settlement in a town in New York state, where the hostesses were girls employed in the local factories. "Over fourteen" of course they were supposed to be, but half of them would have failed to measure up to the ten year old girl in our own home, and hollow chests and bent shoulders augured ill for the future.

Aside from the physical disaster resulting from the hard work and long hours, a further evil is wrought by depriving these girls of all opportunity to learn how to keep a home. A girl whose life has been spent in the factory knows neither how to cook nor clean nor sew effectively, and married life for her spells disaster. She brings into the world children stunted physically, mentally and morally and does not know how to care for them after they are born.

A century ago the children of the working population of England were swept into the cotton mills, and today England is in a panic over the degeneration of her national physique. That is the cost of child labor. Can we afford to pay it?

PEDIATRICS

ORIGINAL ARTICLES

INFECTIONS OF THE URINARY TRACT IN INFANTS*

BY WALTER R. RAMSEY, M.D.
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Infections of the urinary tract in infants is an extremely common condition. Many of the heretofore obscure fevers of infancy are found to be due to this form of infection.

Three years ago I reported thirty cases of infection of the urinary tract in infants and children and gave an outline of the work that had been done on the subject. Since then I have seen more than one hundred cases and have been able to follow many of the cases previously reported.

Infections of the urinary tract in infants was first described by Escherich who reported sixty cases practically all of which were due to the colon bacillus. That the most common cause of infection of the urinary tract in infants is the colon bacillus there is no doubt, probably 90 per cent of all cases are due to this of form infection. Escherich thought the inflammation was limited to the bladder, hence the name coli-cystitis. Heubner and Finkelstein found, however, that in many the pelvis of the kidney was also involved.

Goppert found that from 1 to 1½ per cent of all infants brought into his clinic suffered from infections of the urinary tract. The great majority of the cases occur in girls. In my first fifty cases all except one were in girls. Since then I have seen a considerable number in boys, about 10 per cent. In Goppert's cases, 90 per cent were in girls.

From this it was thought that the infection was an ascending one, originating primarily from the discharges from the bowel coming in contact with the urethra. It is now practically certain that a certain number of cases, especially those which are primarily pyelitis are infected by way of the blood stream (hematogenous). Any form of organism capable of producing inflammation in any other organ may also produce an inflammation in the urinary tract. Last spring I had a series of twenty cases of urinary infection resulting from a diplococcus resembling the pneumococcus (a report of this will appear later). My diplococcus cases were undoubtedly hematogenous.

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*The Saint Paul Medical Journal, June, 1914.

Children of all ages are infected and it is not uncommon to see infants of three months, or less, suffering from an acute infection.

The disease occurs as an acute or as a chronic condition. In the acute infections the symptoms may be constitutional, local, or both, and either one may predominate in the individual case.

The acute infections with predominating constitutional symptoms are by far the most common. The most common symptoms are fever, frequently high as 103-106, and extreme restlessness, the onset is often abrupt, often following some of the other acute diseases, frequently after convalescence has been well established, or not infrequently following some derangement of digestion. There may be vomiting and occasional convulsions. The skin may be either hot and dry or pale and moist; usually pale. The pulse is rapid and the respirations frequent and sometimes irregular. Not infrequently there is some irregularity of the bowels, in fact there may be a distinct diarrhea. Pain in the region of the kidney is sometimes complained of by older children.

There may be marked retraction of the neck muscles which together with the sharp cry while the child is asleep has often resulted in a diagnosis of meningitis. I have seen several cases in which this mistake was made.

The temperature runs a variable course. It may remain high for several days with some slight remissions and then end suddenly as in pneumonia, or it may run an intermittent course rising abruptly to 105 or 106, and then after a few hours drop to normal. These sudden flights of fever are usually preceded by a chill. This same process may be repeated on the same, or on several succeeding days. In the interval the baby seems well, plays and eats almost normally. The temperature may follow the typhoid type, persisting for several weeks. There is usually in this type some bowel disturbance, some distention of the abdomen, some tenderness, dry-coated tongue and general apathy. This type is frequently mistaken for typhoid fever. I saw one case who six months previously had been treated for typhoid fever, the blood, however, gave a negative Widal and there is little doubt that the condition was an acute pyletis as the urine contained a large quantity of pus and bacteria which were very slow in disappearing. If one observes later the temperature chart it does not closely resemble that of typhoid, the temperature is too remittent.

Most of the acute cases apparently recover completely, but are prone to relapses. During the past month I have seen relapses in several cases; some of these have been free from any symptoms or urinary findings for three years.

Pfoundler found that the blood from cases suffering from acute infections by the colon bacillus was able to produce clumping of the colon bacilli just as the blood after the method of Widal produces clumping of the typhoid bacillus. The immunity from one attack is, however, very transient since reinfection occurs so frequently.

Marked constitutional symptoms are said by some observers to be more severe when the inflammation involves the pelvis of the kidney than when it only involves the bladder; this, however, I think is doubtful. It is difficult and usually impossible to determine whether the infection involves the bladder alone or whether it involves the pelvis of the kidney alone, or whether both are involved. Goppert believes that the infection always involves the whole tract and describes the condition as pyelocystitis with emphasis on the first syllables.

The acute infections in which the local symptoms predominate are more common than generally supposed, since the local symptoms in young infants even when pronounced are more difficult of interpretation than in older children. Not infrequently the local disturbances, frequent urination and tenesmus, are completely overlooked and only the general symptoms, fever, crying and extreme restlessness are observed. The frequent bowel movements are, in this class of cases, many times due to straining as a result of the bladder irritation. If the diaper is removed and the infant closely observed it will be found that at short intervals some urine will be passed with straining and frequently a small amount of fecal matter at the same time. This is often mistaken for colitis and all the attention directed to the intestinal tract. In other cases the local irritation is manifested by the child pulling at its ears, scratching its head, swaying its body from side to side and backward and forward. When by an examination of the ears, nose and throat, an infection there can be eliminated the urine should always be examined.

The chronic infections are fortunately much less common than the acute varieties. Several of the acute cases, however, seen by me five years ago are now chronic. They assume the form of a chronic bacteriuria with more or less local irritation. Many times the chronic cases of incontinence, especially in girls, are due to bacteriuria. These children are usually pale and poorly nourished and are subject to irregular attacks of fever. Sometimes there is a persistent rise of temperature some time during the day, extending over long periods. During the acute exacerbation there is usually considerable pus in the urine and in some cases there is pus in varying amount constantly present. Practically all of these have been constipated since birth. These chronic cases are practically uninfluenced by medical treatment.

Pathology

Thiemisch found at autopsy, the kidneys in cases which suffered from infections of the urinary tract, of normal size or nearly so. The pelvis of the kidney was also very little dilated.

The pathological findings in the urinary tract were small in comparison to the severity of the symptoms. The reports of Prof. Ricker from microscopic examinations of the mucous membranes were usually negative and were reported mostly as normal. This included the mucosa, submucosa of the pelvis of the kidney, ureters and bladder.

This report of the urinary tract contrasted greatly with the findings in the kidneys themselves. In most cases he found many small abscesses under the capsule with corresponding changes in the parenchyma. These cases were suffering from a pyelitis and died of another acute disease.

Modes of Infection

The preponderance of females affected, points strongly to the ascending mode of infection and that this is the common source of infection of the bladder in girls I have not the least doubt. The frequency with which the pelvis of the kidney is the first to be involved has given rise to the opinion that these cases are infected directly from the blood. Not infrequently after having demonstrated much pus in the urine some specimens will be almost clear while the next one will again contain large quantities of pus cells.

It has been demonstrated that without any lesions of the kidneys being present bacteria may pass through and appear in the urine. It has also been demonstrated by Heubner and Mozier that frequently the blood contains the colon bacilli and that in inflammations of the lungs, pleura and pericardium colon bacilli are frequently found. The frequency with which pyelitis follows other acute infections suggests the idea of an infection of the kidney as a result of lowered resistance in the presence of some form of infectious agent.

When there is an involvement of the kidney structure, pus casts are liable to be found. In one case in which there was practically a complete destruction of the one kidney no casts were ever found.

Diagnosis

The diagnosis is made by a critical examination of the urine, although the general and local symptoms are sometimes fairly characteristic.

The urine in acute cases is usually acid. In many of the acute cases the urine is practically clear. If there are many bacteria it is turbid (always in chronic cases) and if there is any considerable amount of pus there is a deposit. In many very acute infections no pus is ever found, the urine contains only cocci or bacilli and some epithelial cells. When there is doubt as to whether the pus and bacteria may result from external contamination, the urine should always be withdrawn, especially in girls, with a catheter.

A chemical examination may show a slight trace of albumin, or if the urine is clear none with the ordinary albumin tests. It will, however, usually give a trace of nucleo-albumin with the cold acetic acid test.

The important thing is the microscopic examination. The urine should be thoroughly centrifuged if clear and a drop put on a slide with a cover glass. No staining is necessary. Of course pus cells may be readily seen, but careful focusing and not too much light is necessary to see the bacteria. The urine must be freshly passed, since urine a few hours old, if in a warm place will usually contain bacteria of various forms. Colon bacilli may be readily seen as motile light spots, or rods. The character of the fever in many cases is fairly typical. It is not infrequent to find without any other symptoms the temperature suddenly shooting up to 105 or 106. Where the lungs, throat, intestinal tract, and middle ear may be excluded the urine should be critically examined.

In only one case, a girl of eight years, was I able to make out any enlargement in the region of the kidney, and in this case there was a great quantity of pus in the urine. A differential diagnosis between bladder and kidney infections can be made only after a cystoscopic examination or catheterization of the ureters, which in young infants is impossible, and even in older children difficult

In the chronic cases, especially in girls who have reached the age of four years a cystoscopic examination should be made and the ureters catheterized if possible. When catheritization of ureters is impossible close observation through the cystoscope may determine the infected side, and by this means some of these chronic cases where the infection is limited to one kidney could be saved by surgical means.

Prognosis

In the acute cases the prognosis is generally good. I have no doubt that many of them would get well without treatment. Many of them continue to have bacteria and pus in the urine in varying amounts for a considerable time after all symptoms have disappeared. These cases are particularly prone to relapse on the slightest provocation; they usually remain pale as long as the urine contains bacteria, or pus cells.

In cases where there is an involvement of the kidney itself, as in the case reported by Thiemisch, the prognosis is, of course, bad. In the chronic cases of bacteriuria the prognosis is ultimately bad. I have not seen any deaths occur as a result of the disease, although I have no doubt that some of the chronic cases will ultimately succumb to the infection unless they die of some intercurrent disease.

Treatment

During the acute stages, as complete rest as possible should be insisted upon. The diet should be light in character and all seasoning should be as far as possible eliminated from the food. The lower bowel should be thoroughly emptied at least once daily by a saline enema.

Medication

Hexamethylenamin has enjoyed a wide reputation in the treatment of all infections of the urinary tract and I believe when given under proper conditions and in sufficient doses is of undoubted benefit. Its efficiency depends upon the elimination of free formaldehyde in the urine. That many of the failures in the use of hexamethylenamin have been due to a lack of knowledge of the conditions which renders it effective is made clear by Hinman in an experimental study of the antiseptic value in the urine of the internal use of hexamethylenamin. His conclusions are as follows:

1. "The conversion of hexamethylenamin into formaldehyde is a simple chemical process which will readily occur in an acid medium, but will not occur in an alkaline medium.

2. The amount of excretion of hexamethylenamin in the urine is influenced by the size of the dose, by the frequency of administration and by the character of the changes that occur in the acid contents of the stomach.

3. The amount of the subsequent conversion of this hexamethylenamin in the urine is dependent on the degree of urinary acidity, on the duration of exposure to the influence of this acidity, and on the percentage concentration of the drug in it; and in order to give formaldehyde conversion in antiseptic amounts the urinary acidity should be greater than 2 cc. of tenth-normal sodium hydroxid for 10 cc. of urine.

4. A low acidity may be temporarily increased by feeding certain acid-producing drugs, and this increase in acidity may often be maintained by giving these drugs alternately.

5. Disease of the kidney has no influence whatever on the formaldehyde content in the urine.

6. At the level of the kidneys, hexamethylenamin in doses of fifteen grains three times a day has no antiseptic value.

7. Formaldehyde is present in the bladder urine in the same amount in practically every case receiving fifteen grains of hexamethylenamin by mouth three times a day, but the dosage is too small a routine from which to expect a reasonable antiseptic benefit in every case.

8. The allied hexamethylenamin compounds do not give greater antiseptic values than pure hexamethylenamin.

These conclusions were drawn from observations on adult patients so that the dosage for infants would be correspondingly small."

If given for too long a time and in large doses, considerable irritation in the bladder may result. In one case I saw a decided hemorrhage from the bladder attended with severe tenesmus, resulting from a five grain dose of hexamethylenamin repeated four times daily. The hemorrhage and irritation, however, promptly cleared up when the dose was reduced.

A rash not unlike that of measles, although never confluent, not infrequently occurs after giving the drug for several days.

Since formaldehyde, as demonstrated by Hinman, is not eliminated in the pelvis of the kidney in sufficient amounts to be of antiseptic, or germicidal value, we cannot, therefore, in cases of pyelitis hope for any benefit from its use. Colon bacilli, as is well known by bacteriologists develop preferably on slightly acid or neutral media, therefore some alkali such as sodium citrate in sufficient doses to keep the urine distinctly alkaline is indicated in these cases. In chronic cases of bacteriuria due to the colon bacillus I have seen a greater diminution in the number of bacteria in the urine by this treatment than by any other, including that of autogenous vaccines.

In persistent cases of pyelitis in older children, catheterization of the ureters and irrigation of the affected pelvis of the kidney with a solution of formaldehyde or silver nitrate has been followed by good results in some cases.

In two cases of acute cystisis where the tenesmus was severe, an irrigation of the bladder with a 3 per cent solution of silver nitrate neutralized at once with normal salt solution was followed by marked and permanent relief. Treatment should be maintained until all pus and bacteria have disappeared from the urine and for a considerable time after. Specimens of urine should be examined from time to time over a period of several years, as re-infection is very liable to occur and might otherwise go unrecognized with a resulting chronic bacteriuria.

HOOKWORM DISEASE

BY L. EMMETT MOCK, M.D.
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It has been only a few years, perhaps within the recollection of all who are present here today, that Yellow Fever (with malarial fever a close second), was the Hydra-headed monster of the South, wreaking its deadly vengeance on practically all who contracted the disease and causing a reign of terror throughout the region in which it appeared and grave concern throughout the entire South. Today we rarely hear yellow fever spoken of, and then very casually, as a thing which "once was but is no more," belonging only in history; it has been relegated to the past through the heroic efforts of the great profession to which we belong.

One man in giving a definition of life, said, and very aptly, that "Life is just one dammed thing after another," and so it is with the South in regard to its fight with disease; it now has two monsters of frightful mien to fight, one of which I wish to call your attention to today, this one being hookworm disease. While it does not cause the reign of terror, wreaking its vengeance so swiftly and deadly as did yellow fever, yet it slowly but surely takes its toll of human lives. It has so insiduously done its work that it affects its thousands where yellow fever affected perhaps only tens.

It is just within the last few years that the South, and the country at large has woke up to the realization of what hookworm disease really is, what it is doing and what it means to the South and the importance of eradicating it; and I wish to say here that John D. Rockefeller was one among those who realized that it was time to be up and doing for the eradication of hookworm disease; for the Rockefeller Hookworm Commission is doing a great work along that line throughout the South.

Hookworm disease is caused by a species of hookworm, (Ankylostoma Duodenale, Uncinaria Duodenalis, and Necator Americanus), which lives in the small intestines as a parasite. It is especially prevalent in warm countries, and in some regions of country in temperate latitudes, when the summer and other features, such as warm, damp mines offer favorable conditions, and occurs mostly in people who come in contact with the damp earth or water that is infected with the larvae of the parasite.

The disease is characterized by a progressive anemia, weakness, impaired development in the young (both physical and mental), and various symptoms in the circulatory, digestive and nervous systems, and in various degrees and combinations. While it is occasionally fatal, yet with the proper treatment and the proper hygienic surroundings it can be cured. We also have what are known as "hookworm carriers" which is of vital importance. In this class of cases we have the mild infections where the patient, if we may call them patients, owing to their racial immunity, or to their splendid physical condition, they resist the infection so completely that the symptoms produced are so slight that they are not even put in the class of suspects; and while we cannot say that they are suffering with hookworm disease, yet they are infected, going at will discharging the ova of the parasite in their feces, polluting the soil and making themselves a menace to the public health: so you can very readily appreciate the importance of the hookworm carrier.

Hookworms have an extensive range. They are found in all parts of the Tropics, where, it is said, and perhaps truthfully too, that they are the greatest enemies of the human race, and in some sub-tropical climates, and in some regions classed as temperate. The extreme range of latitude is from 51 degrees North to nearly 40 degrees South. It is one of the most common and most important diseases in the tropics. It is no doubt the chief cause of the so-called tropical anemia, instead of being due to climatic conditions as was formerly thought.

In Europe the disease has been found chiefly in Belgium, France, Germany, England, Hungary, the Balkan peninsula and Italy. It is found in other European countries, the worst infections being found in mining districts; the infection in some of the mines running as high as 95 per cent, and in some carrying a high death rate. The high temperature and moisture in the mines favor the development of the larvae; watered mines being the worse. In Africa, Egypt (90 per cent in Cairo, 20 to 30 other places), the Mediterranean countries, the East and West coasts to the Cape, Uganda, Mombosa, Mozambique, Zanzibar, Madagascar, Marititas, the Comorro islands. The African negro is not so likely to show severe symptoms as many other races. In Cameroon Kulz found 70 per cent of the population affected. In Asia there are many severely infected areas including most of India, China, Cochin-China, Burmah, Siam, Ceylon, Malay Archipelago, Java, Borneo, Formosa and Japan. The Philippines, Guam, Australia, New Guinea, Fiji and Sandwich Islands are severely infected. In Manilla Strong found 52 per cent of 4,016 Philippine prisoners infected. In South America the disease is very extensive, especially in Brazil; also as far south as Argentina. It exists in Mexico, Central America, in Panama, and in all parts of the Antilles the disease is present.

In the United States there has been no systematic and extensive search made, but it is clear that the country from Virginia at the Potomac river to Florida and Texas is infected. In Virginia Clayton's early case furnished Stiles with his first case of Uncinaria Americana, Bagley (1910) believed that there were 80 per cent of the working people in the cotton mills that were infected In North Carolina it is more frequent. In 1914 Nicholson and Rankin found 37 per cent of 140 students of Wake Forrest University infected. Sometimes every man from a given district was infected.

The disease is present in South Carolina, Georgia, Florida, Alabama, Tennessee, Mississippi, Louisiana, Arkansas, and Texas is widely infected.

The chief factors in the existence of hookworm disease or hookworm infection, given the presence of the parasite, as by fresh importation, are high temperature and moisture with oxygen.

The modes of infection are through the skin, and by the mouth; or we might say, directly by the mouth and indirectly by the mouth through the skin. Though direct mouth infection may occur, yet it is of minor importance in the production of hookworm disease. It is believed that skin infection is practically the only source of the disease.

Different species of hookworm have been found parasitic in various lower animals, dogs, sheep, cattle, horses, pigs, cats, foxes, seals, badgers, etc. These, however, are different and distinct from those infecting man and have never been found in man. Two species infect man: Ankylostoma Duodenale, and Uncinaria Americanus; both have been found capable of entering the skin of lower animals, but have never reached adult life in the intestinal canal of any animal beside man, except possibly the Chimpanzee, the gibbon and gorilla. They reach adult life, or the reproductive age, in the intestines of man, lay their eggs which pass out in the feces. The eggs cannot hatch in the intestines for lack of oxygen, and possibly from the presence of acids and gases produced by intestinal bacteria and flora, and it has been shown by Looss and Smith and others that the young worms cannot infect until they have reached the encysted stage of their lives, which requires at least four to five days after they are hatched out, and hatching requires eighteen hours or more after they are expelled. The above stated facts—that the parasite reaches the reproductive stage only in the intestinal canal, that the species infecting man do not infect other animals, that the eggs do not hatch in the intestinal canal, and that the larvae are not infectious until they are at least four or five days old, show that the feces of infected persons are the only sources of every hookworm infection, and that a man cannot directly infect himself.

The number of eggs passed with each stool of a heavily infected person is estimated to be as high as four to four and one-half millions; mild cases, 70 per cent hemoglobin, 1,700,000. Remembering that the average number of worms in severe cases is 1,000 to 4,000, it is obvious that it would not require more than 1-1000 part of the eggs in one stool to produce a severe infection if all developed. In considering these figures we wonder that it is not more destructive than it is. Hookworm eggs do not hatch in the intestinal canal; nor do they hatch in undiluted feces, except under certain special conditions. They have often been kept in a liquid condition for months at a time without any of them hatching; on the other hand, if infected feces are exposed to drying, some of those on the dried out surface will hatch but those deeper in remain undeveloped. Exposed to flies that infect them with their larvae, the constant mixing by the larvae crawling through, allowing aeration (oxygenation), permits of rapid and complete hatching; though hatching in this way the larvae die out before reaching the infectious stage. Dilution of the feces with one or more times their bulk of most any inert, porus substance like charcoal, sand, dirt, etc., puts them in the most favorable condition. Experimentally the best diluent has been charcoal and sand. They must have oxygen and a certain amount of moisture which is very necessory to hatching the eggs and preserving the life of the larvae. Drying kills them.

Feces containing eggs, properly diluted, with the proper heat, moisture and shade, will hatch the larvae in twenty-four hours; in two to three days they shed their skins, this is the first ecdysis. After about five days after hatching they begin a second stage of development, or ecdysis; this time they stay inside the skin they have cast, or retracted from and is then called encysted. It is now capable of infecting, is in the infecting stage; but before this time it could not infect. Before the encysted or infectious stage is reached the larvae are very easily killed by sunlight, changes of the temperature, too much dilution of the feces with water (1 to 1,000, or above), drying and the chemical constituents of the feces; so, actually very few of the larvae that hatch out reach the encysted or infectious stage. After reaching the infectious stage they infect by the larvae being swallowed, or the polluted or infected or infected soil or water coming in contact with the skin through which the larvae pass, causing a condition which is known in the South as "ground itch," "foot itch," "dew poisoning," "toe itch," etc. (There are some cases of "ground itch," however, which do not appear to be followed by the intestinal stage of hookworm disease. Stiles says that in his experience about 87 per cent of hookworm cases definitely admit a history of ground itch.) This ground itch is the cutaneous stage. After pasing through the skin the larvae reach the blood stream, pass with the blood into the heart, then into the lungs, get into the bronchi, pass up to the mouth and are swallowed, and it is very probable that a great many of them are spit out), pass through the stomach into the small intestines, principally the jejunum, their natural home where they undergo further development. Four or five days after reaching the small intestines another ecdysis begins in which they acquire a buccal cavity or capsule with which it fastens on to the mucous membrane of the bowel by sucking in a plug of epithelium which it wounds and from which it sucks the blood which gives it its nourishment; in four or five days following this the last ecdysis begins and the last skin is shed; they are now about one-fifth of an inch long but grow rapidly and in six to eight weeks from the original infection reach the reproductive or adult stage and begin to lay their eggs.

There is perhaps no disease in which the symptoms vary so much in degree as in hookworm disease; this, of course, depends upon the number of worms present, racial and individual immunity. The number of worms may vary from one up to the lethal dose. Fatal cases in which only ten or twelve worms were found at autopsy have been reported, and other cases where as high as 400 worms have been expelled and the patient recovered. Intercurrent or associate diseases which cause more or less anemia may cause a variation of the symptoms. The symptoms of hookworm disease are due to loss of blood and the effects of a toxin supposed to be given off or produced by the parasite as it hangs on the mucosa of the intestine, which may destroy blood; this blood destruction and loss of blood gives rise to varying degrees of anemia, which in turn gives rise to other symptoms the direct result of long continued loss of blood; it is a question if all the symptoms may not be attributed to this, unless it be the eosinophilia so often found present; it is sure that the most prominent symptoms may be attributed to it. There are some people affected with hookworms that present no clinical symptoms, but if are relieved of their worms usually gain several pounds in weight, feel better generally and show improvement in blood count and hemoglobin. The symptoms here described will be in the severe infections as seen in the white race, generally; the negro does not present the same symptomotology as the whites do with a like infection, as they seem to show more or less immunity.

The skin in general is dry, from a waxy white to a dirty yellow color resembling tallow, with an absence of perspiration; the hair is dry, resembling hemp; the beard, pubic and other hair of the body scant and may be late in appearing; there may be edema of the face, especially over the cheek bones, feet, legs, scrotum or a general anasarca.

Skin wounds heal slowly. Stiles says that many of his patients, about 57 per cent of the well marked cases, either show tibial ulcers or give a history of such lesions.

The face may show an anxious, oftimes a stupid expression; the mucous membrane may be a chalky white; the pupils show a tendency to dilatation, even in a strong light; many have a peculiar blank stare; night blindness is often complained of; the line of demarcation between the skin and mucous membrane of the lips may entirely disappear.

Cervical pulsation may be very prominent and visible several feet away; the thorax is often so emaciated that the ribs stand out prominently; the shoulders droop and are thrown forward; the shoulder blades stand out prominently, (winged shoulder blades).

The abdomen is often swollen to the degree as to simulate pregnancy, giving the condition known locally as "pot-belly," "butter-milk belly," or "shad-belly."

The appetite is very variable; there is a great tendency to develop an unusual appetite for articles of food along some particular line, as for lemons, pickles, coffee, etc.; in the severe cases this tendency may take the direction of "dirt eating," which means that the patient may eat wood, sand, clay, chimney-soot, plaster, cotton, wool, pebbles, etc. Stiles states one case which came under his own observation in which a boy ate three coats, thread by thread, in one year's time.

The stomach is often enlarged, heart-burn and flatulence are common, nausea and vomiting occurs, pain and tenderness in the epigastrium are present; Ashford and King in 1904 gave this as "the most constant, most suggestive and most clearly marked of all symptoms of the digestive tract:" the tenderness is marked on inspiration; it is median and continues toward the right, but is less marked and may even disappear toward the left.

There are disturbances of the circulation, among which there is a presystolic thrill, hypertrophy of the left ventricle; hemic murmurs are nearly always present, palpitation occurs early and is prominent and constant, dyspnea is very common in the later stages; the pulse varies from 80 to 132 not necessarily bearing relation to the temperature; the temperature may be normal, sub-normal or may reach 100 to 102 F.

In the blood there is a marked reduction in the red blood cells and the hemoglobin; the red cells may fall as low as 754,000, and the hemoglobin has been reported as low as 8 per cent; eosinophilia is marked in practically all cases except severe chronic cases with low resisting power.

.The muscles are weak and flabby and the movements slow, the patient tires easily and usually gains the reputation of being lazy.

Mental lassitude, headache and dizziness are frequent; the effect on the mind is often marked; children in school affected with the disease often complain that it is hard for them to study, and they are usually the most stupid children in school, and progress slowly with their studies; tingling and formication is often present; insomnia or somnolence is often marked; joint pains are common.

The genital system may be very markedly affected by the disease; if severe infection occurs in childhood puberty may be delayed for many years. Stiles says that he has known girls of twenty years who menstruated only two or three times a year, principally in the Winter, and girls 18 to 26 who had never menstruated; the menstrual retardation and irregularity are among the most common and prominent symptoms noticed, and there is no doubt that hookworm disease is one of the most common causes of menstrual disorders among the girls in the South, and especially in the cotton mills and in the open country; abortions and miscarriages are common; sterility and impotence are reported as being frequent.

As to the duration of the disease; in case there is no reinfection a hookworm patient may retain part of his infection for at least six years and seven months, and probably for ten or twelve years; the present evidence indicates that he will probably outgrow his infection in about ten to twelve years.

Hookworm disease plays a very important part in the death rate both directly and indirectly; perhaps the indirect the greatest. The Porto Rican Commission estimated that 30 per cent of the deaths on the island were due to hookworm disease.

Diagnosis.—Manson says that "The secret of the diagnosis of ankylostomiasis, like that of many other diseases is to suspect its presence."

There are three methods of diagnosing hookworm disease, namely; by microscopic examination of the fecal matter to find the eggs; by judging the symptoms, and by experimental treatment and finding the expelled worms in the feces. No positive diagnosis can be made without finding the eggs or worms in the stools. The recognition of well marked cases on the basis of symptoms is not at all difficult to one who is familiar with the disease. Given a patient in an infected area with dry hair, dry, tallow like skin, dilated pupils, or an unusual tendency to dilatation, shoulders drooping forward and downward, epigastric tenderness continuing toward the right with a tendency to disappear toward the left, winged shoulder blades, slow speech, anemic, poorly developed, scant pubic and auxiliary hair, delayed type of menstruation and the history of ground itch, especially if there should be several such persons in the same family, the diagnosis is almost positive.

Treatment.—In the treatment of the ground itch there is very little accomplished, if any thing, other than to heal up the lesion, as the larvae remain in the skin so short a time until they pass into the deeper circulation, and they resist the action of strong chemicals to such a degree when in the encysted stage that it is doubtful if any of the larvae are killed by the local treatment; the foot may be soaked in warm water, or antiseptic solution, the vesicles opened and pus evacuated and cleansed with an antiseptic solution, as carbolic acid solution 1 to 40 and treating the resulting ulcer with the proper antiseptics, under favorable circumstances will usually heal the lesion in about ten days. It should be kept bandaged to protect from scratching; a good ointment to use for the itching is made of salicylic acid, zinc oxide ointment and vaseline in the proper proportions. For the treatment of the worms in the intestinal canal, thymol, beta-napthol and male ferm are the drugs most frequently used; and as thymol is the one most widely used in our country I will only give the thymol treatment. The dose of thymol is from 7½ grs. to 60 grs., according to age or apparent age; in children it should be given according to apparent age. I will give Ashford & King's table of doses, which is recommended by Dock & Bass:

Under 5 years old in size	7½	grs.
5 to 10 years old in size	15	"
10 to 15 years old in size	30	"
15 to 20 years old in size	45	"
20 to 60 years old	60	"
Over 60 years old	30 to 45	"

There are conditions considered unfavorable which would require a still smaller dose than indicated by size; such as pregnancy, diarrhea, cardiac depression, dropsy, extreme anemia and great weakness.

In administering thymol it is customary to give it in broken doses one or two hours apart. The patient should eat sparingly and a very light diet on the day previous to taking the treatment, and at six o'clock in the evening in place of supper take a good dose of epsom or Glauber's salts; the following morning at six o'clock 1-3 the dose of thymol is given, at seven o'clock 1-3 the dose is given, and at eight o'clock the last 1-3 the dose is given; at ten o'clock another dose of salts is given. The patient is kept in bed lying on the right side in order to hasten the passage of the thymol through the stomach. No food at all should be allowed, and no fluids except water and sparingly of that, during the day of treatment. Nothing containing alcohol, oils or grease of any kind must be given, as they dissolve the thymol and is likely to give thymol poisoning. Following this plan of treatment toxic symptoms are rarely seen. Thymol is best given in 5 gr. capsules, first having been triturated with an equal amount of milk-sugar, or some other soluble inert substance. The stools after the treatment should be strained through a cheese cloth in order to find the expelled worms. When necessary to administer to children too small to swallow capsules or wafers it can be suspended in some muscilage acacia or some simple syrup. As to the time to administer the treatment, Sunday is usually the day chosen, as it necessitates no loss of time for those who have to work and for children who are going to school; for on Monday following treatment they are ready to eat any thing they want and to resume their duties. Treatment should be continued at intervals of one week until the eggs are no longer found in the stools, which usually requires three to six treatments, sometimes more. The anemia and general condition should be treated according to the requirements in each individual case; and along with drug treatment we must bear in mind that pure air, sun-light and nutrition are very important factors in building up these patients; and, last but not least, after the patient is cured make the sanitary condition such that there will be no reinfection, or new infection, as this is the only means by which hookworm disease can be eradicated.

CLINICAL OBSERVATIONS ON THE MEDICAL INSPECTION OF SCHOOLS

BY J. W. TORBETT, B.S., M.D.
Marlin, Texas

A sound mind in a sound body is one of the greatest assets a child can possess. The state desires to assist each child in obtaining an education as the best equipment for attaining the greatest success and good citizenship in life. The more educated and enlightened a nation is the less use it has for restraining laws.

Since sanitation and hygiene have become such a vital part of our education it behooves us to have those principles instilled by precept and example into the child's life habits at the earliest age to become of great and lasting benefit. These studies may be taught in the regular way and the children never, as a rule, be sufficiently impressed to follow those teachings in daily life. But in those schools where medical inspection is practiced the children with physical defects become—not in a derisive but an educative way—object lessons to teach important things that will never be forgotten.

According to Gulick and Ayres, the statistics of New York City and other cities where medical inspection has been practiced for several years show that at least 60 per cent of the children having physical defects make 9 per cent less progress than those physically strong. About 85 per cent of those defects are of the teeth, nose, throat or eyes, and, if left uncorrected, will retard the child's progress through the common school course from six months to two years and perhaps permanently injure its health throughout life.

Decayed teeth and bad gums are being more and more recognized as the portals of entry for pathogenic bacteria in producing enlarged glands, tuberculosis, abscesses, rheumatic infections and indigestion.

No physical examination of any patient is complete without a careful examination of the mouth, throat, and teeth. Enlarged and infected tonsils, adenoids, trachoma, etc., are now too common and well known to need comment from me.

Seven years ago I read an article before this Association, "The Detection and Prevention of Diseases in School Life," which was designed to help the teachers to become inspectors in the absence of competent medical inspection. Your committee on text books last year recommended that such subjects should be on the program and discussed freely in each annual meeting of county and state Teachers' Institutes in order to arouse the proper interest and enthusiasm among the teachers of the state in these subjects, for through the schools and the children alone by means of the proper text books and wide awake teachers can the best health be attained and conserved. Without medical inspection it is our greatest reliance and safeguard. With medical inspection it is the greatest co-operative assistance.

It matters not how vigilant the parents may be, nor how observant the teachers are, nothing can take the place in authority and influence of competent medical inspection. When doctors will not practice themselves what they preach, much less should they expect the people to do so. We all need a reminder, a competent paid reminder, whose duty it is to look after things of such great importance we are all so prone to neglect.

Witness the scientific and systematic results in Cuba and the Canal Zone. Only one-tenth as many now die in Cuba from malaria as did before there was forced government sanitation. In the last six years in the Canal Zone the death rate has been reduced from 39 1-2 per thousand to 6 1-2, and maintained at the rate of one cent per day for each person. Just think of it! the lives saved and the sickness and misery prevented by one-fifth the cost of your daily cigar!

One third the deaths now in Texas are due to preventable diseases, and first class general sanitation and medical inspection could be maintained at much less expense than in Cuba or Panama. It is impossible to expect people to obey the requirements of the sanitary code without an educational feature to teach them the personal benefits derived therefrom. Competent medical inspection alone furnishes that feature better than any other way. Of course, it costs money. But aside from the lives saved by the reduced amount of contagious diseases in schools and the physical defects of teeth, eyes, nose and throat removed before they have produced permanent injuries, it pays in dollars and cents to the state in time saved by increased health and efficiency.

I could report many cases of so-called rheumatism—one just a short time since brought several hundred miles who had a tramatic infective cellulitis due to strenuous athletics with defective teeth as the foci of infection. Nearly a quart of pus was removed from the child's leg and he was sent home with the proper hygienic instruction.

In my article seven years ago I advised the county and city physicians be appointed upon examinations for a term of years and not allowed to do practice except upon the indigent, but required to devote their entire time to the inspection of children, the school houses, public places, food and water supplies, and to teaching the public correct sanitation and hygiene. They should be paid $2,000 to $3,000 per annum and furnished competent assistants and nurses, one for each 1,200 to 1,500 school children. The benefits of such a systematic method of medical inspection would be great to the public as well as the children and would not cost any exorbitant sum, levied in the form of a state tax. Many of the provisions would be carried out by the children and their families after they were once aroused and educated to the proper enthusiasm. The average cost in other cities where such has been practiced has been from 13 cents to 50 cents for each child. It is 40 cents in Austria now. And no city where it has been done has gone back to the old method.

The City School Circular No. 32, sent out recently by the Bureau of Education at Washington, mentions a splendid plan adopted by some cities of small population.

Supt. Theo. B. Shank of Jeannette, Pa., says:

"In this community medical inspection is conducted practically without expense to the tax-payers. The physicians and dentists were persuaded to undertake the work gratuitously by being shown that it would not only be a very gracious and generous act but that eventually it would be a good thing for the profession which they represent.

"The Board of Education was very willing to equip a room with everything necessary for the examinations, and the work was begun five years ago The people of the community were assured that the work would be suggestive merely and they were asked to co-operate. All the children were examined.

they received cards indicating defects, and their parents were advised to see the family physician or dentist, as the case might be. Free clinics were offered for those who did not feel financially able to have the work done. No nurse has ever been employed but the teachers were asked to follow up the work as much as possible and to report to the superintendent the results noted. Many children had operations of a minor nature performed. And there was a decided improvement in care of the teeth and general personal appearance.

"One important result of the work has been to remove from the children the inherent fear of the physician and of the dentist. Many parents have developed the habit of visiting the physician to ascertain whether there may be anything wrong with their children instead of merely waiting for serious illness to warn them of danger. During the examinations physicians talk to the pupils and give them valuable hints as to health. The lessons which they learn in this way are found to be much more impressive than the teaching of hygiene in the schools. At the examinations, which takes place early in the school year, five or six physicians and one dentist are present. The physicians are a unit in declaring themselves better doctors for the experience of seeing so many children and so many manifestations of the various diseases of children.

"The cost of necessary equipment for this plan does not exceed $150. As there is no other expense attached to the examination any small town can do the work. Our experience has shown that as a result of the free medical inspection the children are cleaner and neater in appearance. Incipient cases of tuberculosis are discovered in time to be successfully treated. Trouble with adenoids is detected in many cases. Defective eyes are helped before it is too late. A bad heart found in time to save. These and many other instances have convinced Jeannette that medical inspection is worth while."

I know that the very suggestion of increased taxes is enough to give the voter a spasm of the purse strings, but this small increase for such a noble purpose is indeed real economy and should and will come.

Until it does take place the physicians and dentists should do every thing in their power by precept and example to assist the teachers of the public schools in disseminating the proper knowledge and enthusiasm among the children of the state.

The above mentioned plan of free co-operative medical inspection can and should be adopted by every community until further legislation is accomplished.

CONSTITUTIONAL PSCHOPATHY IN CHILDREN*

With A Report of Four Cases

BY JAMES C. HASSALL, M.D.
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"Spare the Rod and spoil the child" is sufficient proof that the problem of the care of the child is not new. It is ever before us and constantly demands our attention. Of all individuals born, a certain number, great enough to cause apprehension, are found to differ from the average mentally. In describing their departure from the normal, one has the choice of several terms. In describing their defects in the intellectual fields, we prefer to speak of idiots, imbeciles and morons. This division, one of degree and not of kind, has been made arbitrarily by the use of the Binet-Simon tests to determine the psychological age of children.

Due to their ability to acquire knowledge beyond that possessed by the normal child of two years of age, we classify certain individuals as idiots. These, even with the greatest care, cannot be educated. Those of the next division, the imbeciles, are able to acquire knowledge possessed by the normal child of from three to eight years of age. These individuals are capable of being taught to care for themselves to a certain extent, but they are incapable of leading a separate existence. The morons psychologically are between the ages of eight and twelve; they can be taught to read and write and in some cases to be quite efficient in manual work requiring no initiative. Under the guiding hand of relatives or under the protection of an instution they do admirably well and are able to earn a livelihood. Left to themselves they cannot cope with the social requirements and are soon a burden on the community.

The above mentioned individuals often show marked defects in their emotional spheres, in addition to their intellectual defect. The former are often shown in periods of excitement with more or less vicious tendencies.

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Waywardness in Children

There is yet to be considered another small group of children who are not feeble minded, whose psychological age, by the Binet-Simon tests corresponds to their chronological age, in whom mental symptoms are present, especially in the emotional fields. These are the boys and girls who seem to be normal so far as intelligence is concerned, who seem to have plenty of ability and shrewdness and even cunning, but who lack moral sense, moral judgment, moral stamina, who lack the ability to adapt themselves to their environment, and live a decent life in the society in which they are placed. This group comprises the wayward girl, the incorrigible boy, the ne'er-do-wells, for whom as yet we have found no satisfactory treatment. They are persons who from an early age display some mental defect coupled with strong vicious or criminal propensities on which punishment has little or no deterrent effect. They show weakness of will, violent changes in temper and strong ungoverned feelings, which if allowed to proceed in their growth will undoubtedly develop anti-social instincts and the children possessed of such tend to become criminals, vagabonds, prostitutes, or even insane. According to Ziehen these conditions are spoken of as the Psychopathic Constitution.

Many of these children show what apparently is an intellectual deficiency, but an examination of them proves this to be due to their improper training rather than to an intellectual defect. As a rule they are mischievous, unruly and hard to manage and do not get on well in an ordinary school. Truancy among them is very common. Soon they fall behind their class and are a hindrance to the education of others.

It is not uncommon to find that they are children of parents who are themselves slightly abnormal, or who are unable to care properly for their offspring. The result is that the children do not receive the care and training necessary to save them from their fate. Ill treatment and lack of supervision are often the cause of the child's running away from home. These 'fuges' are a common manifestation of the psychopathic constitution.

On account of their thieving, their tendency to viscousness and to running away, they frequently come under the hand of the law, or are brought to the physician by parents for advice as to their care.

The following cases, which it is hoped, will be of value as examples of the psychopathic constitution, are taken from several which came under the hand of the law and which were committed to the Government Hospital for the Insane for examination, observation and subsequent recommendation to the Juvenile Court.

Case I. P. M. White, male, age 14. Family history was negative regarding alcoholism, nervous diseases or insanity. He is the oldest of seven children. Birth was difficult and delivery was instrumental. There was slight injury at that time to the left side of the skull. He was bottle fed, his mother being unable to care for him on account of illness. As a young child, he was extremely nervous; sleep was induced with difficulty and the slightest sound would startle him so that he would jump out of bed. Since infancy, he has been of a highly nervous temperament. He suffered the usual childhood diseases and made good recoveries. He never played much with other boys, being fearful of getting hurt. He began school at six, never applied himself diligently to the usual studies but was fond of music and drawing. During his stay in the fifth grade he did not like his teacher, who stated that he was backward in his work solely because he would not apply himself. Frequently he played truant and on account of this he was away from school about one month during the year. While in the sixth grade he left school to go to work. He first came in conflict with the law by assaulting a smaller boy for which he appears to have had more or less provocation. Later he was arrested for knocking down a girl six years old. One evening he attended a performance at a low grade theatre and with several other boys he awaited the troupe at the stage entrance. He accosted one of the women and accompanied her home, where he was seduced. Following this experience, he twice visited houses of prostitution. His mother once found in his pocket a very obscene note from a girl at school, inviting a visit from the boy. Intercourse with this girl was denied by patient. On one occasion he left home and spent the night in a hotel in the city. For this he would give no reason. The patient appeared before the Juvenile Court for the third time by having been arrested while trying to sell a suit of clothing belonging to his father, in order to obtain enough money to run away from home to go to a distant city to work.

Mental examination of the boy showed him to be bright and alert, and well oriented. No hallucinations or delusions were present. The result of the Binet-Simon tests showed his age to be 12 plus years. He read and understood difficult passages and impressed one as being of normal intellect. He denied the sexual irregularities as given in the history obtained from his mother. Physical examination was negative. He was well developed and showed no abnormalities or stigmata of degeneration. Wassermann reaction with the blood serum was negative. During his stay in the hospital he was continually in trouble with other patients and bullied the younger juvenile cases on the ward. At times he was impudent and refused to do as he was told. He disobeyed rules by smoking cigarettes and by cursing the other patients and frequently it was necessary to censure him.

Case II A. S. White, male, age 14. History of grandparents negative concerning alcoholism, mental or nervous diseases. Father is an inmate of the Government Hospital for the Insane, suffering from a deteriorating psychosis. Mother is of a nervous temperament and appears to be hysterical at times. He is the third child of his parents. Birth was normal and as a child he was very healthy. He made good recoveries from the diseases from which he suffered in childhood. He was always obstinate and "hardheaded" and never cared for the association of his mother and sisters. He began school at the age of six, attending parochial schools until the present time. He has always learned rapidly and has been a favorite among his teachers. At the age of five he began stealing money from home. This has continued and every year amounted to the sum of several dollars. He always spent the money, sharing it usually with other boys. His mother's first knowledge of his thieving was when he was twelve years old. He stole a large sum of money from her and gave it to another boy. The same year he stole money from her again and went to a distant city, returning willingly with his mother when she went for him. At thirteen he again left home and spent three weeks at a seaside resort. He would not state where he obtained the money for this trip. He returned willingly when funds were sent by his mother. During the present year he entered a home and stole several rings. These were returned to their owner by his mother. Ten days later in company with another boy he was arrested while stealing a slot machine from a store. This led to his appearance before the court.

During his life he has always been easily excited and at such times he has bitten his finger nails until his fingers bled.

He denied all sexual habits, although he gave the impresssion of not being sincere in his answers to questioning along this line. He has many fantastic dreams during his waking hours. He would imagine himself a millionaire, and has pictured himself the owner of automobiles, houses, etc. He denied the association with a female in any of his phantasies.

Mental examination showed him to be accurately oriented and emotionally indifferent. No psychotic symptoms were present. The Binet-Simon tests showed him to be of normal mental capacity for his age. Physical examination revealed no abnormality. Wassermann reastion with the blood serum negative.

During his stay in the hospital this patient conducted himself fairly well though occasionally he annoyed the other patients and violated the rules in various ways. At times he appeared emotional, especially when questioned regarding his misconduct and on two occasions he became lacrimose.

Case III. S. M. White, male, age 14. History of grandparents negative. Father has used alcoholic liquors to excess for many years. On this account he was unable to hold any position for a great length of time. He was once arrested for disorderly conduct. When sober he was capable of earning a very good salary. He finally left his family on account of drunkenness. His mother is fairly well educated, gentle and refined. The patient is the sixth child. One brother was reckless and disobedient until he became of age. One sister left home following her mother's objection to her accepting the attentions of several men. She is now believed by the family to be living an immoral life. One son left home and has not been heard from for several years. Patient was healthy until two when he had a bad attack of measles. At three he suffered "brain fever (?). As he grew he became peevish, hard to please and irritable. On this account he was humored by his mother. He began school at seven, at nine he was away from school sometime with pneumonia. He did not attend regularly and made poor progress. He would magnify slight ailments so that he could remain at home. While in school he was mischievous and disobedient and was often punished. He was finally expelled from school, his teacher having said that he was so bad she could do nothing with him. He stole children's lunches, books, pencils, etc., and teased them in every way he could. He was very rude and impolite to his teacher. His mother tried keeping him at home for a time. He would not obey her and when corrected would run away from home, remaining away for several days, his mother having no knowledge of his whereabouts. Often he would return home with small amounts of money, saying that he had earned it selling papers, though in reality it was obtained by selling articles which he had stolen. After a time at home, he was sent to another school which he attended for five months, receiving good reports daily. One day he was taken home by an officer who accused the patient of having stolen some fruit from a stand. In April, 1913, he was arrested for beating and dragging a smaller boy across the street. He was placed on probation by the court to which he reported each week. During this time he continued to do bad things; he stole and smoked cigarettes. Several times he was found stealing and committing offenses but for these he was never arrested. His next appearance before the court was caused by his being found in a store stealing candy. He was later arrested for having stolen a purse and two small articles from an office and was committed to the Government Hospital for the insane for examination. He would frequently lie, especially when questioned about his thieving.

Mental examination elicited no psychotic symptoms. The Binet-Simon tests showed him to have a mental age of 12 plus years. Except for outstanding ears, prominent abdomen and a marked flat foot, patient's physical examination was negative. Wassermann reaction with the blood serum was negative. During his short stay in the hospital, his conduct was not good. He was very nervous and active and always inclined to annoy other patients. At times he was stubborn, cross, noisy and disagreeable, and it was necessary to censure him.

Case IV. B. R. White, female, age 16. Patient's paternal grandfather goes on regular sprees every two or three weeks. One paternal uncle was insane, and was confined in an institution. One maternal uncle was considered erratic. Father uses alcohol to excess and is possessed of a violent temper. Mother is well and her habits are good. Patient was the only child. Birth was uneventful; she was backward in learning to walk. Made good recoveries from the childhood diseases, from which she suffered. Began school at ten, made rapid progress until she reached the eighth grade, in 1911, when she eloped with a young man whom she married. To do this she misstated her age. She lived with her husband for two weeks. She then visited an aunt for several days. When she returned to her apartments her husband had left. Returning to her parents she lived with them for a few months. She then entered a school for girls some distance from her home. After a few months here, during which she applied herself very well, she eloped and reurned home and obtained employment in a store where she remained two weeks. She then met a young man and was away from home with him for nineteen days. When met accidentally on the streets by her parents, she willingly returned home but continued to elope whenever the opportunity presented itself. The last time she eloped was with two young men who took her to a house of prostitution where she remained for two days. When found there by her parents she showed no evidence of shame, seemed unconcerned and returned willingly with them. The next day she was taken before the court and subsequently admitted to this hospital.

Physical examination was negative. Wassermann reaction with the blood serum was negative. Mental examination revealed no hallucinations or delusions. Her responses to the usual intelligence tests were good and there was no mental impairment. Throughout the examination she did not appear particularly interested; frequently she spoke of things of greater importance to her, drummed on the table and hummed tunes. She told of her past experiences willingly and showed no shame or remorse for her actions. During her stay in the hospital she conducted herself well, except on the occasion of a visit from her mother, when she became much excited, abused her mother and called her various improper names.

It is seen that these children are not intellectually defective and have shown no psychotic symptoms. Yet they are abnormal and because of their abnormality they have come into conflict with their environment. The important question in connection with such children is that of their recognition and their training.

Parents should be taught to seek the physician for advice regarding their children who show an early tendency to incorrigibility, theft, truancy, or to running away from home. Teachers should be on their guard and should report to proper authorities for medical examination, children who show the above tendencies and all juvenile delinquents seen by the court should have their mental status determined. The early recognition of such types in the school should lead, as with the intellectually defective, to the separation of them from the great mass and to the placing of them in the best institution available.

It is an interesting and withal a difficult problem to care for such children and with our present knowledge we cannot offer a full and complete solution of it. In the past it has been the custom to send these children when detected in misdemeanors to penitentiaries or reform schools with the hope of making useful citizens of them. This form of treatment has largely failed. There is no doubt that the majority of these people in reformatories and penitentiaries could have been spared their crimes against society and their sad fate if proper treatment had been instituted early enough.

As no public provision is made for the care of such children they are most frequently left to their fate. They cannot be cared for in an institution for the insane for they show no frank psychosis. They are mischievous and hard to manage and annoy the other patients. Here, too, they would rapidly deteriorate. An institution for feeble-minded is also not to be considered. These children are not weak minded for examination shows them to be of average intelligence. Their emotion, not their intellect, is defective. With their superior intellect they would instigate all sorts of mischief among their weaker associates.

Many of these children have not proper parental care, so there remains the possibility of placing the child in another family. The difficulty met with here is to find a home for such a child for most people would not undertake the responsibility of caring for an abnormal individual.

At present we are met with the bare facts—these children must remain uninstructed They cannot get along in the ordinary schools and special instruction is necessary. They soon fall behind their class and are a hindrance to the education of others. Because of their tendency to disobedience, theft, and truancy, it is frequently necessary that they be expelled from school.

The boarding school where children receive more individual instruction may be of help to some of these cases, but they are in need of training entirely different from that of the normal child with whom they are thrown in contact. The discipline which is proper for the normal child is not proper for the psychopath and he reacts to it with great obstinacy and frequently with an increase of the psychopathic symptoms.

There is need of a special school or institution where such children could be given the proper care and supervision. When the presence of the psychopathic constitution has been determined, the child should be committed to the institution where he should receive a special medical examination. Then considering his individuality, a special plan of treatment should be devised. Each child should be given individual training and uninterrupted oversight until all symptoms of the psychopathic constitution have disappeared. The length of residence in such a school should be determined by the severity of the psychopathic symptoms.

Such problems as are herein presented are pressing for an answer in the general effort to build up the race. Many earnest workers are busying themselves with them and it is hoped that a continued interest will lead to a clearer understanding of the psychopathic constitution and a minimization of the number of failures traceable to it.

SOCIETY TRANSACTIONS

THE NEW YORK ACADEMY OF MEDICINE

Section of Pediatrics

Stated Meeting Held April 9th, 1914

DR. WILLIAM P. NORTHRUP, IN THE CHAIR

Hypertrophic Stenosis of the Pylorus.—Dr. Mark S. Reubens: This patient came to our notice at the Vanderbilt Clinic at the age of eleven weeks. He was the youngest of three children, the first having died of inanition at the age of three years, and during life presented the same symptoms, excepting that they were more severe and persisted until death. The child probably had a hypertrophic stenosis of the pylorus. A second child was five years of age and had always been well. The patient began to vomit at the age of six weeks, the vomiting being projectile in character and taking place from five to ten minutes after nursing. Constipation was obstinate and there was steady loss in weight. At the first examination a pyloric tumor could be definitely made out and peristaltic waves were distinctly visible. The diagnosis of pyloric obstruction was made and in order to ascertain the nature of the obstruction, Dr. Hess tried to enter the duodenum with his duodenal tube. After three or four attempts he succeeded, thus ruling out organic stenosis and making the diagnosis of pyloric spasm possible. Three hours after nursing we were able to obtain four or five ounces of stomach contents. An x-ray of the stomach showed delayed transmission of food. The infant was kept on the breast alone for four weeks, the interval between feedings being three hours. Under this treatment he continued to lose in weight and all the symptoms persisted. An analysis of the stomach contents at this time showed a combined acidity of 115 to 85, and no free hydrochloric acid. By weighing the infant before and after feeding we learned that he was getting from four to five ounces at a feeding and examination showed the milk to be of good quality. In spite of the fact that the breast milk was sufficient, after four week's trial we substituted complementary feeding. The combined acidity continued to be from 100 to 85, and now a trace of free hydrochloric acid was present.

The points of interest in this case were: 1. The two cases of pyloric obstruction in the same family, both males; in one case the obstruction was of a high grade and led to a fatal termination, while in the other it was mild and led to speedy recovery. These cases lend proof to the theory of Dr. Holt that in all these cases there is a real stenosis and that the spasm is a superimposed phenomenon, but that the stenosis varies in degree in different cases. 2. Almost immediately improvement when complementary feeding was instituted. 3. The disappearance of pyloric tumor when the child began to gain. 4. The persistence of the high acidity even when the infant was doing well, proving that the spasm was not due to high acidity. 5. An x-ray of the stomach taken when the infant was doing well still showed much delayed transmission of food. Therefore too much reliance should not be placed on the x-ray findings in these cases, but rather on the clinical phase.

Congenital Hypertrophy of the Left Half of the Face in a Boy Seven and One-Half Years of Age.—Dr. Sara Welt-Kakels. The patient comes from healthy parents with no consanguinity, no history of lues, or tuberculosis. There is another child, a girl two and one-half years of age, perfectly well. The patient was born at the end of a normal pregnancy; at birth the deformity of the face was noticed. The child was otherwise well developed. There was nothing abnormal in regard to dentition, time of walking, or of talking. The patient had whooping cough in his third year and measles when he was five and one-half years of age. He has occasionally suffered from sore-throat, but has otherwise enjoyed good health. The facial hemihypertrophy has retained its initial proportions in relation to the right half of the face. The child is attending school and is one of the best pupils in his class. At present the enlargement of the left half of the face is mainly in the lower two-thirds, not only the soft parts, but also the bones being involved. The enlargement of the cheek is most prominent; the upper and lower lips of the same side are very much hypertrophied; the left angle of the mouth is drawn downward; the left nasolabial fold is effected; the left half of the nose is larger; the skin over the affected side is normal; there is no hypertrichosis, or coarseness of the hair; in the malar region is a small telangiectasia about a quarter of an inch in diameter, surrounded by a small pigmented area. The action of the facial muscles is somewhat interfered with by the hypertrophy, but he can frown, laugh, and whistle. There is a slight diminution in the response to the faradic current. There is no disturbance of sensibility of the special senses. The examination of the eyes revealed nothing abnormal The vasomotor symptoms are absent; but sometimes there is salivation, seemingly from the left side. The mouth was mostly kept open, the left half projecting. The left half of the upper lip forms an ectropion. Very conspicuous is the appearance of the tongue, which is said to participate only in the congenital and not in the acquired form of facial hemihypertrophy. The point of the protruded tongue deviates to the right; its left half is easily four or five times larger than the right half. The left papillae liliformes and fungiformes are very much enlarged. The left half of the hard and soft palate, the left tonsil and submaxillary gland are also involved. On the inner surface of the left cheek, along the closure line of the teeth are a few small tumors of about peasize. Like the cheek they gave the impression of lipomatous growth. The left upper jaw is very much enlarged and thickened, especially. The left half of the lower jaw is also enlarged, but to a slighter degree. The boy is otherwise fairly well developed. The thoracie and abdominal organs were normal, and Wassermann reaction was negative. The reflexes are normal and there is no other assymetry of the trunk or extremities. His intellect is good.

Dr. M. M. Stark said that in view of the fact that the lipomatous tissue of the cheek and the upper and lower lips was the seat of the maximum "giant" growth, it seemed that this enormous hypertrophy was not without surgical possibilities, even though it was quite possible that subsequently, their initial result might have to be revised. That was to say, this being a case of local giant growth, it was quite possible, that even should some of the excess tissue be removed, as it was proposed soon to do, there might be in time a regrowth of this tissue. It was proposed to remove in several sittings enough of the excess tissue to give for the present, and it was to be hoped for a long time, a good cosmetic result. As Dr. Welt had said, all the histological elements in the region of the hypertrophy were involved in the giant growth. Should the bony structure at any time take on extraordinary growth, any attempt at plastic correction would then be out of the question.

The Roentgen Ray as a Diagnostic Help to the Pediatrist. Dr. L. E. LeFetra:—The value of the x-ray as an aid to diagnosis in surgical conditions that involve the bones and joints is too well known to require comment, while in abdominal and chest conditions in adults it has become a part of the rutine of every large hospital and results have been gratifying in proportion to its greater employment and to the wider experience of the operators. In children the use of the x-ray in fractures, dislocations, rachitis, chondrdystrophy, tuberculosis and syphilis is thoroughly appreciated but there are also certain medical conditions in which the x-ray makes an early and positive diagnosis, which would not be possible otherwise of which I wish to speak. I will consider only such conditions as have come under my personal observation. Enlargement of the thymus gland has been found several times simply as an incident of thoracic examination when there was no cause to suspect it. Moreover the frequent fallacy of percussion in the diagnosis of the enlarged thymus has been demonstrated by the X-ray. In several instances plates taken for the purpose of showing the extent of an empyema have revealed foreign bodies in the bronchus as the cause of the broncho-pneumonic abscess in empyema. This has directed the treatment along proper lines and proved lifesaving. For the detection of abscess of the lung and for determining the extent of empyema and also in the early diagnosis of pneumonia the X-ray has proved of the greatest value. In pneumonia where it was impossible by physicial signs to localize the disease, the X-ray has shown with great delicacy the beginning of consolidation in most cases. Pneumothrax is another condition which is most beautifully shown by the X-ray, and the plates may confirm or make a diagnosis otherwise unsuspected.

In miliary tuberculosis the X-ray and the von Pirquet test have transferred the diagnosis from a region of suspicion or conjecture into a realm of certainty. In addition to the miliary type of tuberculosis of the lung two other varieties have been shown, one apparently a tuberculous broncho-pneumonia without consolidation, and the other a tuberculous pneumonia or broncho-pneumonia with marked consolidation. Often unsuspected cavities have been found usually near the apex and in very young infants.

For the diagnosis of pericardial effusion from cardiac enlargement the X-ray is of the greatest service, and also in showinging us the best place for puncture of the pericardium. It also enables one to follow with greater accuracy the increase or diminution in the amount of pericardial fluid.

In the story of the alimentary canal the X-ray gives valuable information in regard to the stenosis of the esophagus, especially where this is spasm odic or cicatrical and it may also be of value in regard to stenosis of the pylorus, with regard to kinks of the intestine, or to the presence of megacolon. With reference to pyloric stenosis I think the X-ray is not at all essential and is often misleading.

For the diagnosis of early bone syphilitic bone disease from tuberculous bone disease, particularly in cases of dactylitis or epiphysitis, the X-ray is of the greatest value.

An Application of the Roentgen Ray to Infant Feeding.— Dr. Charles Hendee Smieth:—Radiography has several applications to infant feeding. The size, shape, and position of the stomach, its emptying time in healtth and disease, the effect on the emptying time of different foods, the proper amount of food and the interval of feeding have all been studied with Roentgen-ray, and valuable information has been obtained. The point which I wish to bring to your attention has to do with the management of the infant, and with the way in which foods given rather than with the exact composition of the food.

The teaching of doctors and nurses for many years has been that the child must be kept at the breast or bottle for twenty minutes, must then be held in a perfectly horizontal position, and be put to sleep at once without change of position. Many mothers do not follow this plan, but let the child take his food in a longer or shorter time than twenty-minutes, hold him up against the shoulders after feeding, or prone acrcss the knees, or trot him up and down in the sitting posture, finally after an interval putting him to sleep. One of these plans must be mose desirable than the other. The posture of the child after feeding is of importance because of its relation to vomiting colic, sleep, and general health.

The way in which posture can affect digestion depends first on the anatomy of the stomach. Radiography has shown the fallacy of the older idea that the stomach in infancy is vertical in position. The cardiac orifice of the stomach is held firmly to the posterior abdominal wall. The fundus lies in the left paravertebral groove, on the diaphragm, spleen, tail of the pancreas, kidney, and mesocolon, reaching a plane considerably posterior to the cardia, since the vertebrae project forward some distance into the abrominal cavity the jyloric end of the stomach is also pushed forward by the vertebrae, the head of the pancreas and the duodenum, and lies in contact with the anterior abdominal wall and liver anteriorly. The pyloric opening is directed backward to the duodenum, but lies in a somewhat anterior plane than the cardia. There is therefore an obliquity of the long axis of the stomach from behind forward and to the right, as well as from above downward and to the right. The most posterior part of the stomach is the fundus, the most anterior that part of the body just to the left of the pyloric antrum. The cardiac opening is nearer the most posterior plane reached by the stomach than it is to the most anterior. The second factor in regard to posture is that there is a certain amount of gas in the stomach of every individual. Practically every radiagraph taken in the erect position a bubble of gas in the fundus end of the stomach. In the prone position it is not possible to estimate accurately the amount of gas present.

The gas in the stomach may be derived from three sources, swallowed air, gastric fermentation, and intestinal gas. Gastric fermentation as rare and was only an important source when there was stagnation from obstructed pylorus or from gastric atony of extreme degree. Intestinal gas does not commonly pass back into the stomach. Swallowed air accounts for the gas in the stomach in the majority of cases. This takes place constantly. Air is constantly present in the pharynx and is forced down with the food at the time of each swallowing act. It is often possible to hear a child gulp down air with each swallow of milk. More or less air may be swallowed with saliva or nasal mucus between feedings. Tongue suckers, thumb suckers, and babies with "comforter" habit, suck and swallow air during a considerable part of their waking hours. The behavior of liquid in the stomach does not behave differently from that in a glass bottle or other receptacle. If the child is held in the horizontal position the liquid gravitates to the posterior part of the stomach, that is to the fundus and forces the gas to the anterior part of the fundus and to the right end of the body of the stomach and pyloric antrum. Since the cardiac orifice is situated well back against the vertebral colum, it follows that it will be covered by the liquid and that the gas cannot escape into the esophagus. It can only escape through the pylorus, if at all. If the amount of food plus gas is enough to distend the stomach either food or gas must be forced out through the pylorus or food must be regurgitated through the esophagus until the tension is relieved on the stomach wall. This can be readily imitated by taking a bottle two-thirds full of liquid.

When held on its side no air can escape through the bottle mouth; held upright the gas can escape with ease if under pressure. When the child is held upright the liquid gravitates at once to the dependent part of the stomach, displacing the gas to the highest point, that is the fundus, this making it possible for the gas to escape by way if the esophagus. This often takes place as soon as the child is held erect.

Dr. Smith exhibited X-ray plates showing what happened when a child was fed and then placed in the ordinary horizontal position. The milk in the stomach had gravitated to the fundus and displaced the gas to the anterior of the stomach. The esophagus showed plainly as the child regurgitated foor during the exposure. It was perfectly evident that no gas could possibly escape from the stomach until enough milk had been vomited to uncover the cardiac orifice of the stomach. The child was then held erect and the second exposure showed the effects of gravity on the stomach contents, the milk having gravitated to the dependent part of the stomach, the gas to the upper part, and it was now possible for it to escape. After the exposure the child was patted rather forcibly on the back and eructated gas. Ater ten minutes another exposure showed that the stomach had lost all its gas except a small bubble just at the cardia, and the stomach had contracted down on the milk and small amounts of bismuth had passed into the small intestine.

The horizontal prone position is better than the supine, because the liquid food gravitates to the anterior part of the stomach and forces the gas to the posterior part. This is perhaps why so many infants sleep better on their stomachs than on their backs. This is shown by a second series of radiograms.

The effect on the stomach of extreme distension seen in some cases must be unfavorable to digestion. The peristalsis can take place only with great difficulty, and it seems as though there must be interference with the secretion by pressure on the mucosa and the blood vessels. The symptom "colic" is probably due in many cases to painful gastric distension, as well as to painful peristalsis. The frequency with which colic accompanies regurgitation is suggestive of their common origin.

The instinctive posture which many mothers assume when not taught otherwse by nurses or doctor, when they hold the baby up against the shoulder after nursing, is the one in which the baby can most easily get rid of this undesirable swallowed air. Patting on the back and slight pressure on the epigastrium may assist in the process of expulsion of gas. At times the eructation may be violent and the contraction of the stomach so forcible and rapid that a small amount of milk may come up in the air. The amount of regurgitation in such instances is negligible compared to the comfort given the baby. Very feeble babies often vomit whenever put down on their backs, the cardiac spinchter seemingly having no power. In some such cases this may be stopped by constantly keeping the basket or bed at an angle of about 45 degrees, and never allowing the child to assume the horizontal position. The inverted position for nursing which has been suggested as a remedy for vomiting can have no influence except an unfavorable one on this form of vomiting. The horizontal position is of course not the only cause of vomiting; other causes must be eliminated in order to attain success by the postural treatment.

It is my belief that it is better for a child to take a feeding too rapidly than too slowly. Rapid nursing may choke the baby, cause coughing, gagging and vomiting, if the pharynx fills too rapidly, while slow feeding on the other hand, multiplies the number of swallowing acts and increases the amount of air taken. In nursing from very full breasts it has been shown that an infant may take 50 per cent. of the milk in the first or three minutes, 75 per cent. in the first five minutes, and after that the amount per minute increased rapidly. Such infants showed no more signs of discomfort in indigestion than others unless they stayed at the empty breast sucking and swallowing air. Except in the case of feeble infants there is no good reason why a feeding might not be taken in five or ten minutes nad at most in fifteen rather than the traditional twenty. This is quite contrary to the usual teachiing. Experience shows that the holes in a nipple must be made very small indeed to prevent a strong child from emptying it in ten minutes. It was much better to have four or five large holes so that the milk ran freely and to allow the baby to regulate the time himself. Puny infants sometimes became so discouraged from the effect of getting milk from a nipple with small holes that they refuse the bottle.

The writer has been testing this plan for six years and has yet to see a case of simple regurgitation which could not be relieved by these means. The teaching in practically all training schools for nurss has been that the baby should be kept in the horizontal position after nursing and must on no account be held up or moved about. During the past six years I have met only three nurses who hal evolved their plan of holding the baby erect as a routine. Nurses train mothers now-a-days. The inexperienced mother takes the word of the trained nurse as law, and when a doctor and a nurse disagree, the doctor must have unusual influence over mother to have an even chance of having his ideas carried out. In many hospitals the babies are fed and allowed to lie without changing their position all day. This is a very bad practice. Dr. Northrup pointed out years ago that it was lack of holding in a mothers' arms that made many babies do badly. Dr Smith concluded that (1) Regurgitation, colic, and indigestion depend not only on the food, but on the manner in which it is given and the posture of the child between feedings. (2.) The food must be of proper composition and of proper amount. It should be given at as long intervals as possible, depending on the gastric capacity and the total amount of food required per day. (3.) A feeding should not be taken too slowly, five to ten minutes being long enough and fifteen minutes being the maximum time. (4.) The child should be held upright before feeding to get rid of any gas in the stomach. If air is swallowed in large quantities it is often necessary to interrupt the feeding one or more times holding the child erect until the air has been expelled. Immediately after the feeding the child should be held upright against the mother's shoulder and given the opportunity to eructate gas. (5.) The child should be placed in his bed preferably in the prone position with the head of the bed somewhat elevated. This routine may be followed with every child even though he does not regurgitate. Habitual tongue suckers have to be held up sometimes between feedings

The Roentgen Ray and Pneumonia. Dr. Howard H. Mason gave a lantern slide exhibit showing what the X-ray revealed in pneumonia. A number of the slides showed the correlation between the beginning of physical signs of pneumonia and the appearance of the shadow showing the beginning of consolidation. Other plates showed that with the disappearance of physical signs of pneumonia the shadow of consolidation cleared up. The X-ray has shown that when a lung clears it seems to clear equally all over and not from within outward or from without inward. Quite a chance in the shadow is often noted within twenty-four hours. In all the early cases before the lung consolidated there was just dulness, but when consolidation extended to the larger bronchi one got all the signs of pneumonia, bronchial breathing, rales, etc. Another series of plates showed the difference between bronchial and lobar pneumonia.

Dr. William P. Northrup:—I would like to ask Dr. Mason whether in the old fashioned so-called pneumonia it was an undiscovered marginal lobar pneumonia that we had?

Dr. Howard H. Mason:—I believe it is like the case shown, usually in the region under the Scapula and difficult to make out. There are breath sounds, a few rales and dulness, but no bronchial breathing.

Dr. William P. Northrup:—I am reminded of a case in my practice in which the child had a high temperature and slight stupor, in fact all the rational but no local physica signs of pneumonia. The patient recovered by crisis and went on living. I had competent men in consultation with me and they all felt chagrined that they could find no local signs of disease.

Dr. Ward Bryant Hoag:—Why is there so much consolidation shown in lobar pneumonia, while in typical pneumonia with high temperature, rapid respiration, and bronchial breathing the X-ray does not show such a marked shadow? In one case coming under my observation in which there were no local physical signs on the sixth day, Dr. Kerley was called in consultation and could make out no physical signs. On the seventh day we did not take the sounds, but on the eighth day the child beban to show physical signs and the first attempt to take the sounds with the stethoscope revealed the lesion and that same night the temperature fell from 106 degrees to 90 degreesF.

Dr. I. S. Hirsch:—In regard to the difference between bronchial and lobar pneumonia I do not agree entirely with Dr. Mason. It is the general consensus of opinion that the pulmonary markings are due in lobar pneumonia to the blood vessels passing from the hilum to the periphery the veins, arteries, and capillaries all take part and the density is due to the congestion of the blood vessels. The bronchial in the X-ray picture seldom show except at the hilum and then but slightly in contrast to the thick shadow at the base. In pneumonia there are small spots showing the infiltration in the air vesicles. In all bronchial pneumonias there is a tendency to confluence of these spots In lobar pneumonia there is an even density during hepatization and that serves to differentiate these two forms of pneumonia.

Dr. William P. Northrup:—It is most illuminating to see what has been unearthed by the X-ray. In the Presbyterian hospital, Dr. Mason's case of tuberculous meningitis in which the lungs showed no signs whatever of tuberculosis and yet the X-ray showed the lungs studded with miliary tuberculosis. like measles. The X-ray has certainly brought us a new line and valuable aid in dealing with children's diseases. In this case just referred to, at autopsy all the areas that the X-ray had indicated as affected were found to be involved.

Miliary Tuberculosis of the Lungs Dr. I. S. Hirsch:—It is eminently proper that a physician should have read the paper on the value of the Roentgen ray as a help in the diagnosis in diseases of children, since the X-ray specialist might be suspected of allowing his enthusiasm to run away with him.

The slides exhibited demonstrated instances in which the X-ray has revealed the location of a foreign body in cases in which there were no signs or symptoms that points to a definite localization. For instance one roentgenogram shows a nail so lodged in the bronchial that it was very difficult to remove. It was removed by means of the fluoroscope which is often more useful than the bronchoscope in effecting the removal of a foreign in this locality.

The X-ray does not show the bronial lymph nodes unless they are markedly enlarged. In some instances in which the X-ray shows no enlargement the lymph nodes have been found enlarged at autopsy, and in others which the X-ray has seemed to show enlargement there has been none.

A series or roengtenograms was shown which illustrated cases in which the X-ray has made the diagnosis of miliary tuberculosis where the signs and symptoms have not been sufficient to warrant the diagnosis, and cases in which a suspended miliary tuberculosis has been confirmed by the X-ray.

Roentgenograms Illustrating Birth Fractures and Atresia of the Esophagus. Dr. Edward D. Truesdell:—The first slide illustrates artesia of the esophagus. The baby fro mwhom the picture was taken was full term child. When he came to nurse he had peculiar attacks of chocking and cyanosis. A careful physical examination did not result in a diagnosis until an attempt was made to pass the catheter into the stomach; this could not be done and the X-ray showed the catheter in a blind pouch which ended at the bifurcation of the trachea and the cridoid cartilage. The second plate showed an exactly similar condition. Pressure deformities and birth fractures of the skull were shown, but Dr. Truesdell said they had never met with fissure fracture, all the fractures being depressions sililar to the depressions made by pressure on a ping pong ball. Dr. Hirsch also showed illustrations of microsephalus with the receding frontal bone and irregularities of ossification and tardy ossification He stated that he had seen ten birth fractures of the clavicle but these showed no particular feature. Several of them were bilateral and in all union took place. They usually put these fractures of the clavicle up in the "figure of eight" or the velpeau bandage Of particular interest as showing what nature can do in the restoration of these injuries was a series of plates showing angular deformity of the humerus resulting from a fracture without displacement. At the end of two weeks there was firm union but a marked angular deformity. No attempt had been made to treat this fracture. Successive plates showed the angulation becoming less and less marked, and at the age of two years the humerus was practically normal. The same thing was shown to have occurred in other instances. Other plates were shown illustrating fractures with Erb's paralysis, fractures of the femur, and syphilitic periostitis.

Thymus Obstruction. Dr. Frederick M. Law:—The first plate was taken fifteen minutes after death and the condition was confirmed by autopsy. The child had been operated on for cleft palate, the operation lasting one-half hour. The child was returned to bed and six hours after the operation was all right. The nurse observed him at that time and turned to care for a child in the adjoining bed. A few moments later she looked at the child and he was dead, having died without a struggle. The plate shows the enlarged thymus rolding over the heart. This was a case of status lymphaticus. A second plate also showed an enlarged thymus.

Types of Infant Stomach. Dr. Leon Theodore LeWald:—The first plate exhibited showed an intussusception in an infant. The exact location was not apparent from the physical examination as the tumor could not be made out. TheX-ray showed the precise location of the intussusception so that the incision could be made directly over it, and on inspection the intussusception was found to be exactly where the X-ray had indicated.

Dr. Le Wald exhibited a number of roentgenograms showing the variations in size, shape, emptying time, and the amount of gas in different stomachs of infants. The supreme test of stomach function in infants as in adults is the emptying time.

Even peculiarly shaped stomachs are able to empty themselves in a reasonable length of time. The X-ray was sometimes a positive help in making the differential diagnosis between pylorospasm and pyloric stenosis, and in deciding whether an operation was necessary or not. The roentgenograms from one case showed a small amount of food passing the pylorus. This case went without operation and go well. On the other hand in another instance it was found that nothing had passed the pylorus in twenty-five minutes and even at the end of an hour nothing had passed and it was decided that operation was necessary.

Two illustrations of congenital syphilitic stomachs were shown. Both children gave a marked Wasserman reaction. In one of these cases there was a cicatrical area in the lower half of the stomach and an entero anastomosis was done. The child did well for about a week when he began to vomit and another X-ray examination gave the clue to the trouble. The esophagus was found to be very much dilated on account of the small cardiac pouch and by feeding small quantities of food the child finally recovered.

Roentgenograms taken two years or more after operation for congenital pyloric stenosis showed the food passing though the gastroenterostomy opening. If one can decide on the proper cases for operation one need not hesitate to operate since the results are shown to be very satisfactory.

RETROSPECT OF CURRENT PEDIATRIC LITERATURE

Diseases of the Alimentary System.

Under the Charge of

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Amebic Dysentery in Children.—Dr. R. L. DeBuys of New Orleans presented this paper before the Atlantic City meeting A. M. A. New York Med. Jour. He said the incidence was rare in children as they were less expossed to etiological factors, but it was more common than was usually believed. In the Charity Hospital in New Orleans there were four cases to evry 3,000. It was more prevalent in the male on account of greater exposure. The sources were water and green vegetables. Amebic dysentery should be distinguished from bacillary dysentery which was more acute and toxic. Diagnosis was not difficult, and warm, liquid stools must be used to detect ameba. The symptoms were pus and blood in the stools, fever, prostration, anorexia, dry skin, frequent movement of the bowels; the blood picture was one of secondary anemia. A large number of cases should be studied before conclusions could be drawn. Treatment consisted of ipecac in form of pills. Emetin seemed to be the best form of treatment and complete rest for the bowels and for the individual was essential.

Experiments with Swine Fat in Infant Feeding.—Dr. J. Zahorsky of St. Louis presented this paper (before the Atlantic City Meeting A. M. A. New York Med. Journ.). He said that the American practitioner had always been partial to the use of fat, but many young infants could not digest cows' milk unless the fat was withdrawn. Many fats had been tried, as olive oil, butter fat, cod liver oil, but these results were not as good as those given by swine fat which resembled the fat in human milk. Pure lard might be used and had been used in his experiments. He had proved that lard might be safely used. In institutional infants the lard fed babies locked better than the other babies and always were chosen for adoption instead of the others. Sometimes the infant refused the bottle, sometimes there was regurgitation, but usually the stools were yellow and there was no digestive disturbance. A 3 per cent. proportion of fat was used and was well tolerated.

The Absorption of Fat from the Intestinal Tract of the Actively Tuberculous Child.—Dr. F. W. Schultz of Minneapolis presented this communication (before the Atlantic City meeting A. M. A., New York Med. Jour). The tuberculous child needed a diet rich in fat. It was desirable to have as large a deposit of fat as possible in the organism, under any feeding conditions. It was equally desirable not to have an access of fluid in the tissues. The former seemed to increase and the latter to decrease resistance to tuberculous infection. Experiments showed that animals fed with carbohydrates were less resistant to tuberculous infection and those fed with fat rich diet were very resistant to tubercule bacilli. The importance of fat to the tuberculous child brought up the question of fat tolerance. In peritoneal tuberculosis the blocking of the lymphatic channels markedly diminished fat absorption. In scrofulous cases the fat absorption in the stools was found diminished. The conclusion was that a diet with most fat and causing least retention of water was the most favorable to tuberculous children.

Further Observations Concerning the Relation of Heat to Infant Mortality.—Dr. H. F. Helmholtz of Chicago presented this paper (before the Atlantic City meeting A. M. A., New York Med, Jour). He emphasized the need of very complete details daily as to feeding of the child, the passages of the bowels, records as to maximal and minimal temperatures. records as to humidity, and variations between room and outdoor temperatures. Observations extended over two months in 1913 during severe heat. No definite relation of high room temperature to gastrointestinal disturbances had been recorded. Most rooms were often above 85 degrees, some above 90 degrees. A room temperature of 90 degrees could occur without hyperthermia in a child. Infants showed a remarkable power of adjusting themselves to high temperature. Where deaths occurred in periods of greatest heat it was always found to be owing to carelessness or ignorance of the mother. It was found that if properly cool clothing was used and proper care that infants could withstand much higher temperatures than generally supposed.

The Metabolism of Carbohydrates with Special Reference to Its Effects on the Absorption of Fat and Nitrogen and on the Retention of Salts.—By Dr. F. B. Talbot and Lewis W. Hall of Boston (before the Atlantic City meeting A. M. A., New York Med. Journ). Dr. Talbot read the paper, a study of carbohydrate metabolism in a baby in which the lactose, fat, protein, and ash balance were determined. The baby was admitted to the Massachusetts General Hospital suffering from digestive disturbances. After admission it increased in weight; at five months it weighed 9 pounds. Fat and protein were kept the same in the feeding, sugar was increased in successive periods. The child had one attack of diarrhea and was put back to former formula. It then lost weight. It go 115 calories per kilo of body weight. The urine never contained sugar. With increased amounts of sugar there was increased retention of protein. With increase of fat there was also a change of retention. The increased amount of sugar had no effect upon the absorption of fat or protein; they remained normal. There was no effect upon the absorption of ash. With the diarrhea fat absorption dropped from 90 to 75 per cent. Absorption of nitrogen also dropped. The acidity of the stools increased with the diarrhea. It was not determined how much sugar was lost, but taking fat alone the baby lost in the stools 15 calories per kilo per day.

The Use of Boiled Milk in Infant Feeding.—Dr. Roger H. Dennett, of New York, stated (before Atlantic City meeting A. M. A., New York Med. Jour) that milk is boiled for infant feeding not only to destroy bacteria and prevent disease, but to make it more digestible, although boiling has formerly been thought to have just the opposite effect. He believes that the prolongated use of boiled milk during the bottle period does not cause nutritional disorders such as rickets, anemia, malnutrition and poor musculature, provided the proper feedings are given, and cites eighteen cases of his own that were fed with boiled milk throughout the most critical feeding period. Scurvy may be avoided by giving orange juice. He gives his reasons why boiled milk is more digestible than unboiled milk: 1. Boiled milk does not cause digestive disturbances when fed to infants who have no difficulty in digesting unboiled milk. 2. Boiled milk is very helpful in overcoming digestive disturbances which are already present such as diarrhea and vomiting. 3. Certain infants who are being fed boiled milk often have digestive disturbances brought on by changing from the boiled milk to the unboiled, although many infants who have a greater digestive capacity stand the change without this difficulty.

Experiences with Whey-Modified Milk in Infant Feeding.—Dr. Jerome S. Leopold, of New York, stated that human milk was unquestionably the milk of choice in infant feeding, but when human milk cannot be obtained artificial feeding must, of course, be employed. Eiweiss milk, malt soup, buttermilk, and the various simple milk dilutions with the addition of sugar have been used with much success during the past few years, but there was room for improvement in infant feeding. E. Schloss, of Berlin, has recently devised a milk mixture which resembles human milk very closely, and which Schloss called whey-modified milk. With this mixture, Schloss obtained nearly as good results in feeding institutional children as with breast milk. Doctor Leopold used this milk mixture on fifty-four institutional infants during the past two years. The ages varied from two days to thirteen months. Very good results were obtained in thirty-six cases, fairly good results in ten cases, and poor results in eight cases based on the results obtained the following conclusions seem war ranted: 1. Whey-modified milk is indicated whenever breast milk is not obtainable. 2. Much better results are obtainable with this milk mixture than with any other method of artificial feeding, in indications at any rate. 3. Whey-modified milk is especially indicated in very young infants, and in infants under three months of age.

The Influence of Starch on Infant Digestion—Dr. Thomas S. Southworth, of New York, stated (before Atlantic City meeting A. M. A., New York Med. Jour.) that starches in the form of gruels were added to infants' food for the following reasons: 1. To prevent curds. 2. The proteins in them supplement the proteins in milk. 3. Starch influences intestinal peristalsis, digestion, and absorption. Fermentation in the stomach and intestines is often caused by sugars and fats. Starch can be used to replace some of the sugar, as is done in Schloss milk and Keller's malt soup, and butter milk mixtures made with flour. Boiled starch acts as protection against the injury done by large or excessive amounts of sugar or fat. He also stated that rapid peristalsis interferes with absorption of fat and sugar and the boiled starches tend to prevent excessive peristalsis.

Parenteral Protein Digestion.—Dr. Victor C. Vaughan, of Ann Arbor, Mich., said (before Atlantic City meeting A. M. A., New York Med. Journ.) all body cells are living cells. In order that we may be in health the cells of our bodies must be in normal condition and must function in hormony. As these cells are living, growing, and multiplying, they must have a supply of normal food, and since these cells are made up of protein they must be supplied with protein food. The digestive functions of the alimentary canal have been evolved for the purpose of preparing proteins for the body cells to feed on. The proteins of our food are normally broken up in the digestive tract into aminoacids. These are absorbed through the intestinal walls and serve for the nourishment of the body cells. The blood and lymph carry to all the cells of the body the prepared and absorbed protein split products. Each kind of cell selects from these products such portions as it needs in its own metabolism. It sometimes happens that proteins reach the blood and lymph without being acted on by the digestive juices of the alimentary canal. On a small scale this is constantly happening. We absorb minute quantities of protein through the mucous membrane of the respiratory tract and in ordinary health it may happen that small amounts of undigested or imperfectly digested proteins are absorbed through the intestinal wall. In the therapeutic employment of serums and vaccines undigested protein sometimes in large amount is introduced into circulation. Infection bacteria, which are living proteins, convert the simple proteins of the body fluid into complex, which become foreign proteins. These foreign proteins are digested by the agencies of ferments supplied by the body cells. Poisons are liberated which are responsible for the symptoms and pathological conditions. The digestion of these proteins is called parenteral digestion. How to control and modify parenteral protein digestion is now one of the big problems in experimental medicine.

Care of Delicate and Premature Children in the Home.—Dr. H. M. McClanahan, of Omaha, said (before Atlantic City meeting A. M. A., New York Med. Jour.) that in treating premature infants the body heat must be controlled and the loss of heat prevented. He uses, in preference to an incubator, a clothes basket padded and lined with oil cloth, flannel, and cotton wool. Five hot water bottles (one pint glass bottles) are placed in the basket and also a thermometer, and the temperature is kept at 95 degrees F. The infant is fed without being taken out of the basket. In regard to the nourishment, breastmilk is best and it should always be diluted with an equal quantity of water, or even a greater dilution when it is not well borne. The dangers to be guarded against are: 1. Unnoticed regurgitation, the food then getting into the larynx, resulting in death to the infant. 2. Excessive external heat. 3. Assuming wrongly that an infant is getting sufficient food when nursing directly at the breast.

Open-Air Schools.—Sir J. D. Rees asked whether the Government proposed to provide for the development of open-air schools, in order that the physical deficiencies of the poorer children in public elementary schools, to which the tables of heights, weights, and state of nutrition testified might receive attention without addition to the existing rates and taxes—The President of the Board of Education said that the Board of Education already paid grants in aid of open-air schools for children suffering from tuberculosis and other ailments for which open-air treatment was especially suitable. The Government was fully alive to the importance of the subject of open-air schools, but was alive also to the difficulty of the problem of developing the national system of education in any direction without further expenditure of public money, which would have to be provided out of either rates or taxes, or both. British Med. Journ., Aug. 1913.

Infectious Diseases.

Under the Chare of

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The Relation of Bovine Tuberculosis to Early Tuberculosis in Childhood.—Dr. T. C. McCleave of Berkeley, Cal., stated that tuberculosis was in origin a disease of early life. To prevent early tuberculous infection was the fundamental problem. A large proportion of cases in infancy were derived from tuberculous cattle. The importance of this fact demanded investigation. The British Royal Commission had found that in children tuberculosis of the meninges and of the lymph glands was often bovine in origin. Frazier had found 73 per cent. of cases under three years of age who had been fed on raw cows' milk. Pulmonary tuberculosis might later be caused by the carrying of tubercle bacilli by the lymph glands and blood stream and became active after many years. A transmutation from bovine to human tuberculosis might thus occur. It might be asked what become of the cases of early tuberculosis if bovine bacilli did not change in the adult cases. The supervision of dairy cattle was of the highest importance in this respect. Every year's report of inspection of cattle showed 20-30 per cent. of tuberculous cows. This was a serious menace in view of the possible transmission of germs to the baby. In view of the present primitive hygiene obtaining in most dairy farms the practice of pasteurization in the home seemed to be the only safeguard and should be universally advocated.

School Spread of Contagious Diseases and How to Control It.—Dr. Myer Solis-Cohen of Philadelphia doubted if any one realized the role the school plays in the spread of contagion, both of the major and minor diseases. Doctor Solis-Cohen made an exhaustive study of the epidemic of measles in Philadelphia in 1914. He was of the opinion that the disease spreads by contiguity and possibly the cases reported represent only about twenty-five per cent. of the total number. Medical inspection had failed to check the spread of disease because the teachers do not notify the medical inspector. The attempt to maintain a good class record is another cause of keeping ill children in the classroom. After every two day absence a child should be questioned or examined by the medical examiner before readmission to the school. Any suspicious symptoms should warrant the observation of the pupil until these have been cleared up. He did not believe children contract contagion because of age, but rather because they never have been exposed. If they began school at the age of sixteen they would contract contagion as quickly as they do at the age of six.

Provisions of the Model State Law for the Notification of Controllable Diseases.—Dr. John W. Trask, of Washington, D. C., spoke of the ignorance of physicians as to the diseases on the reportable list as the cause of the small number of reported cases in certain communities. All infections, occupational, venereal, and diseases of unknown origin, should be reportable. A representative of the health department (one familiar with the disease) should see every suspicious disease and not trust the general practitioner who does not have the special knowledge such as the departmental men have at their disposal. In Dr. Trask's opinion no license to practice medicine should be given until applicants furnish an affidavit that they read carefully the law pertaining to the reportable diseases.

Treatment of Diphtheria Bacillus Carriers.—Ten chronic diphtheria bacillus carriers were treated by Rolleston by spraying and swabbing the throat or nose with a bouillon culture of staphylococcus pyogenes aureus. In six faucial cases the findings became negative within two to seven days after starting the treatment. In two nasal cases the treatment was ineffective. In all but two cases a mild form of sore throat was produced, but no complication ensued.

Outdoor Treatment of Surgical Tuberculosis.—Lovett and Fish present definite figures before the annual Atlantic City meeting (Med. RecordRecord) as to the effect on children with surgical tuberculosis of living in the outdoor air. The material presented shows that even in the winter climate of New England this is not attended with risk of exciting respiratory troubles, frost bites or pneumonia. That coughs, colds and sore throats are infrequent among the children living out of doors and much less frequent than among a group of healthy boys who do not live wholly out of doors. That infectious disease has not spread among the children as easily as would have been expected. That after admission weight increases faster than in normal children and that hemoglobin also increases. That symptoms of auto-inoculation, as shown by increased temperature, are as a rule absent and the authors believe the power of resistance and repair improves under these conditions.

Diphtheria Bacilli in Chronic Carriers.—N. I. Lunin (Pediatria, St. Petersburg, Vol. IV, No. 1) found in 708 cases of diphtheria only 1.1 per cent. gave rise to "return cases." The patients were discharged after three bacteriologic examinations of the mucus from the throat and nose had given negative results. He also found that the bacilli that occur in healthy people or remain usually long in those who have had an attack of diphtheria, are not virulent, and are thus harmless. They may accordingly be sent home or left among other patients; the only precaution he recommends is to be gargle the throat and clean the teeth.

Smallpox in Infants and Children.—Analysis by W. Hanna (Brit. Jour. Child. Dis., 1914, xi, I) of 215 cases of smallpox in children under fifteen years of age, taken from the smallpox records of the Liverpool hospitals during the past ten years reveals the fact that among the well vaccinated no cases are to be found under two years, and only seven cases between two and five years of age. The immunity conferred by vaccination in infancy gradually diminishes but still affords partial protection. Between two and five years all, or 100 per cent., are very mild cases, between five and ten years over 90 per cent. are very mild, and between ten and fifteen years over 80 per cent. are in the same category. No severe cases are to be found. The concurrent vaccination performed on a susceptible infant, if it does not entirely prevent, as it will do if performed within one or two days of the day of infection with smallpox, is found to modify the disease in the following directions. The papules may be very few and limited to isolated parts of the body; they pass, however, through the typical course of evolution; in addition to the limitation of papules the eruption itself is frequently modified, the lesions being superficially placed and maturing rapidly, the crusts rapidly inspissating and dropping off. It is found that this concurrent vaccination, if done within the first three days of infection, has the effect of almost entirely neutralizing the small pox so that no symptoms or signs of the disease appear, or the attack will be very mild, such as the appearance of a few papules which may never become vesicle, but simply die away.

Nervous Complications of Varicella.—R. Miller and J. A. Davidson (Brit. Jour. Child. Dis., 1914, xi, 15) report the following case: A boy, aged two and one-half years, developed a mild attack of varicella. The rash was moderate in amount and the constitutional symptoms were not severe, the temperature not exceeding 100 degrees F. Nothing usual was noticed until the morning of the fifth day, when after a normal night the child was found to be unable to stand, or to talk distinctly, and so show a tremor of the limbs, head and tongue. The onset of these symptoms was not associated with any fresh rash or rise of temperature. The tremor of the tongue quickly passed off, but when the child was seen four days later the tremor was very marked in the limbs. It was a slow rhythmic movement, which prevented him from standing without support. The movements of the limbs, particularly of the arms, were slow and stiff. There was no loss of emotional expression but the child was irritable and emotional. The cranial nerves and reflexes were normal. In a few days the tremor gradually diminished until it be came only noticable during excitement, and at the end of a month from the time of onset it had practically disappeared altogether. Since then the boy is thought to be a little more excitable than previously. The literature contains reports of one very similar case; one case of encephalitis affecting the oculomotor nuclei; one of infantile hemiplegia complicating varicella; two cases recorded as poliencephalitis but possibly meningismus; and one, reported as a case of sclerose en plaques but possibly cerebellar encephalitis. The writer also reviews the list.

Statistics of Tuberculosis in Children.—Jules Comby of Paris in the Section of Pediatrics of the International Congress of Medicine, reported 638 cases of tuberculosis in 1,675 necropsies—38%—in the combined hospital statistics of Paris. In the age groups, the number of deaths ranged from 73 to 415. We give only the percentages of tuberculous infection, as the figures in the report we have seen do not agree exactly:

Up to three months, 1.82% tuberculous.
Three to six months, 18.18% tubercuolus.
Six to twelve months, 26.25% tuberculous.
One to two years, 40.72% tuberculous.
Two to five years, 60.% tuberculous.
Five to ten years. 67.15% tuberculous.
Ten to fifteen years, 71.23% tuberculous.

Surgical Diseases of Childhood.

Under the Charge of

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Some Medical Aspects of Pyloric Stenosis in Infancy.—Dr. L. Emmett Holt presented this paper before the New York Academy of Medicine (Medical Record, June 13th, 1914). He said that it was surprising that pyloric stenosis in infancy had gone so long unrecognized, nearly all that was known of the condition having been contributed since 1897. His personal experience with pyloric stenosis included 57 cases, of which 18 were seen in private practice and 39 in among the inmates of the Babies' Hospital. The steadily increasing number of cases seen would indicate that this condition was now being recognized where formerly it was overlooked. Pyloric stenosis occurred nearly always in breast fed infants. In his series of 57 cases, 52 were breast fed, and 40 of these had nothing but breast milk: hence, bad feeding could not be invoked as the cause of this condition. The predominance of the male sex had been noted by all writers. Of his 55 cases in which sex was noted 49 were males and but six females. In four-fifths of the series under consideration the first symptoms of the disease were manifested during the third, fourth, or fifth week, and in only two during the first week of life. The symptoms were usually abrupt in onset. Pyloric spasm played an impartant part in the production of symptoms and the disappearance of all symptoms in a certain proportion of the cases pointed in the same direction. On the autopsy there had invariably been found marked hypertrophy of the pylorus, principally involving the muscular layer. According to his views the symptoms had an organic rather than a functional basis. It was difficult to reconcile the clinical symptoms and the pathological findings with either of these views alone. Dr. Holt believed that definite persistent spasm of the pylorus without hypertrophy was yet to be proven. At autopsy in his experience, hypertrophy had been invariably present. No sharp division into spasmodic and hypertrophic types was possible. The real question was whether there existed an obstruction sufficient to endanger the child's life and how it might best be relieved. The better division was into mild and severe cases. Many points in the pathology of pyloric stenosis were still obscure, but when it came to the clinical aspects of the disease there was no such divergence of views. The typical case suddenly began to vomit persistently and forcibly, had marked constipation, steady loss of weight, and all the symptoms belonging to failing nutrition. Careful examination revealed definite peristaltic waves and in nearly all cases a palpable tumor in the pyloric region the size of a peanut. The forcible and projectile character of the vomiting occurring soon after meals together with its persistence was characteristic, but visible gastric peristalsis was one of the most important symptoms without which one should hardly be willing to make a diagnosis. A palpable tumor could not be considered essential but would nearly always be found by a careful and experienced observer. The tumor was usually more evident just before or during the act of vomiting. The decision in regard to the advisability of operating should not rest finding or not finding it but upon the amount of obstruction present. One of the most important guides to the degree of obstruction was the amount of gastric retention. For this purpose the apparatus suggested by Hess for aspirating the duodenum was useful. This means of establishing the fact of observation was, in his opinion, more valuable than the x-ray. Constipation depended only on the absence of food from the intestines. Other symptoms were always present but were not diagnostic. There was a wide divergence of opinion as regarded the methods of treating pyloric stenosis. Physicians had reported quite a large series of cases treated medically with so low a mortality as to lead to the inference that nearly all these patients recovered if treated properly. Surgeons, on the other hand, considered the disease a surgical one and urged that the patient be turned over to them for operation as soon as the diagnosis was made. Pyloric stenosis in infancy was accredited with a mortality of about 50 per cent. In his series of 57 cases there were 26 recoveries and 31 deaths, a mortality of 55 per cent. There were 28 cases operated on, with 14 deaths; there were 29 cases treated medically with 17 deaths. Three-fourths of these were hospital patients and some were in a hopeless condition when admitted. The whole crux of the situation between medical and surgical treatment seemed to be that when the symptoms and the conditions were such as to make it probable that the patient would live long enough for the condition to subside then medical treatment might be followed out, but if the condition of the patient was such that it seemed probable that he could not withstand the disease until the pathological process subsided then surgery offered the best solution of the problem. The medical risks were not to be ignored; they had not been sufficiently considered. There was danger from acute inanition or from marasmus. To allow the weight of the child to fall gradually from eight to seven or six pounds, or even lower, was to take great chances. There was also the risk of intercurrent disease developing while the child was in an enfeebled condition. Sudden death had been known to occur in cases that were fairly well nourished, where the vomiting had practically ceased, and where these was no assignable cause. Another question remained. If these patients got well without operative treatment did they recover completely or did the lesion remain which might give subsequent trouble? In no instance in which he had been able to follow the subsequent history of the child had there been a persistence of the symptoms into childhood. The surgical risks were partly essential and partly accidental. The essential risks were those of shock, non-union, and exhaustion. These were much reduced by early operation. Of much greater impotance were the accidental risks lagely due to faulty technique. There were also the additional risks of hemorrhage, leakage, obstruction, and infection. With an experienced operator and the patient in fair condition, the operative risk was much less than one would anticipate. The younger the child the less the shock appeared to be. In private practice, with the best nursing and medical attention the risks of medical treatment were small, but there would always be a certain number of cases in which surgical intervention would be required. Medical treatment consisted of careful feeding and stomach washing twice daily with water at 112 degrees F. Breast milk was the preferable food. In default of that a modified milk mixture low in fats should be employed. The quantity and intervals of feeding must be regulated to the needs of the individual case. In children extremely prostrated the Murphy drip was valuable. They had been accustomed to use 4 per cent. solution of dextrose in a normal saline solution, giving four to eight ounces twice a day. Hypodermoclysis was of even greater value than the Murphy drip. Rectal feeding was of very little assistance, except for a short time. Drugs were of little or no value nor could more be said for local applications of heat over the epigastrium. Cases medically treated must be closely watched.

Report of Seventeen cases of Pyloric Stenosis in Infancy Treated by Gastroenterostomy.—Dr. William A Downes presented this report before the New York Academy of Medicine (Medical Record, June 13th, 1914). He stated that his series embraced twenty-one cases, sixteen males and five females. Seventeen were breast fed and one bottle fed. The symptoms appeared from three days to seven weeks after birth. In every case vomiting was the first symptom noted. It was projectile in character and occurred shortly after feeding. A marked loss of weight usually followed. The lower abdomen was retracted and usually soft, while the epigastric region was full and prominent. All cases presented at some time peristaltic waves passing from left to right, though this symptom should not lead to a diagnosis of true stenosis without other more reliable symptoms. To the right of the median line and just below the costal margin a firm, movable tumor about the size of the terminal phalanx of the thumb was felt in every case except the first. Beginning with the eighth case aspiration was practiced in every case as a routine measure, and each stomach was found to have from one-half to four ounces retention three hours after feeding, even though vomoting had occurred. They did not consider it necessary or desirable to submit the babies to x-ray examination before operation. Upon opening the abdomen a pyloric tumor was found in every case. These tumors were hard, smooth, freely movable, and free from adhesions. The pyloric portions of the stomachs were thickened and somewhat edematous and about one-half of them were dilated. A typical gastro-enterostomy was made in all the cases. Ether was the anesthetic used. The abdominal incision should be one-half to three-quarters of an inch to the left of the median line. The reason for this was that there was so little subcutaneous tissue in these babies that it was difficult to obtain union in themedian line, whereas the incision through the rectus muscle healed more readily. Another reason for placing the incision in this location was that in one fatal case a large hemorrhage was found where the needle used in closing the abdominal cavity had punctured the falciform ligament of the liver. With the exception of the first two cases stomach clamps were not used. The after care of these cases was extremely important, and much depended on the judicious use of brandy, atropine, and caffeine, and also upon the proper use of fluids by hyperdermoclysis and the Murphy drip. The after history of these cases was much like the after history in the ordinary case of gastroenterostomy in the adult. A number of the operations were done in twenty-five minutes; the longest time occupied in operating was forty-five minutes. From his experience and observation in this series of cases Dr. Downes said he felt justified in offering the following conclusions: 1. Hypertrophic pyloric stenosis was congenital to the extent that there was an increase in the thickness of the circular muscle fibers at the pylorus. The presence of this thickened muscle fiber reduced the lumen of the pylorus, therefore the stomach, in order to empty itself, contracted more forcibly than normally. This soon caused the mucous membrane to become thickened and edematous, and to assume a more or less spiral arrangement as it passed through the narrowed pyloric channel of from one-half to three-quarters of an inch. The result was a valvular action which gradually produced complete closure of the pylorus. The question as to whether or not the pylorus would admit a probe or catheter at operation or autopsy was of little consequence when weighed against the clinical evidence of obstruction. 2. There was sufficient time between the onset of symptoms and the appearance of the signs of complete obstruction for careful observation and for carrying out any medical measures likely to prove of benefit., provided, of course, that the early symptoms had been properly interpreted . The fear however, that the condition might have existed longer than had been suspected and that the vitality of the baby was not as good as appearances would lead one to believe made him feel that operation was indicated in every case of hypertrophic stenosis as soon as the diagnosis was made. Should depression or early edivence of shock be present immediate operation was demanded. 3. Babies coming to operation in good condition suffered little or no shock, and their convalescence was straightforward. His experience in this respect corresponded with that of other operators.

Transfixation Method of Treatment of Fractured Femur in Children.—Dr. John J. Moorehead read this paper before Section of Pediatrics, New York Academy of Medicine (Medical Record). He pointed out the limitations of the operative method and of the various extension methods of treating fractures of the femur. He allowed that the various suspension methods might be used with advantage in children under three years of age, but after that they were not likly to be entirely satisfactory. Dr. Moorhead's paper was based on a series of eight cases in children ranging in age from five to fifteen years. In nearly all of these children there was no shortening of the extremity, and in many there was lengthening. The first operation of this kind was done with a carpenter's bit augur. He then devised a steel drill with a detachable cutting point. It was made of three-sixteenths-inch nickel steel. The child was anesthetized and a location in the distal portion of the fractured bone was chosen for the transfixation. The field of operation was painted with iodine and the drill was introduced into the soft tissues, the bone, the soft tissues again until the skin on the opposite side was reached. The drill must not enter the medullary canal, the epiphyseal line, or the joint. The cutting point was then detached and a simple apparatus was attached to either end of the drill, to which, in turn, the cords and weights were fastened. This procedure was applicable to fractures of the tibia, the humerus, and the femur, but seemed particularly adapted to the latter. In fractures of the legs as much as 32 pounds could be applied. This method was especially adapted to cases in which other methods had failed, to overlapping fractures, comminuted fractures, old fractures, fractures of the condyle, etc. It was preferable to plating because it was a much simpler and a less extensive operation, did not necessitate a secondary operation, as plating frequently did, required that the patient be under anesthesia only fifteen minutes, was not painful during convalescence, did not interfere to any great extent with the comfort of the patient, made nursing a much simpler matter and gave better results in respect to function and deformity.

The Peril of Delay in the Diagnosis and Treatment of Intussusception in Infancy.—Dr. Edward Wadsworth Peterson presented this paper before Section of Pediatrics, New York Academy of Medicine, (Medical Record). He recalled the great educational effort required to place the treatment of appendicitis upon a purely surgical basis. Today there was general condemnation if a patient with appendicitis was allowed to die without surgical interference. Acute intussusception was far more dangerous to life than appendicitis, and, theoretically at least, belonged exclusively to the surgical field. Experience had taught the hopelessness of expectant and the relative futility of all aerohydrostate measures. In intussusception the clinical picture was more constant and unvarying and the symptoms more uniform and characteristic than in any other type of intestinal obstruction. In spite of this no other class of cases was more often unrecognized and more habitually mismanaged. Because of failure to make a diagnosis or delay in treatment, the mortality was also disgracefully high. Ladd had collected 216 cases treated by hydrostatic methods with failure in 81 per cent. Leichenstern in a study of 557 cases of intussusception placed the mortality at 73 per cent., and during the first year of life at 88 per cent. Many other authorities gave equally unfavorable statistics with these methods of treatment. The statistics of the greatest interest were those giving the time of treatment, either surgical or otherwise, after the onset of symptoms, and almost invariably one was impressed with the fact that "cured" cases were diagnosed and treated early. Cases treated during the first twenty-four hours gave a mortality, in experienced hands, of not over 10 per cent. Cases treated after two days had passed had but little chance of recovery, with but few exceptions. Clubbe reported a series of 173 cases. Of these 16 were treated successfully by enema; of the

157 cases operated upon the results were as follows: In the first 50 cases there were 25 deaths and 25 recoveries; in the second 50 cases there were four deaths and 46 recoveries; in the last 25 cases treated by laparotomy there was not a single death, and in these the average time from the onset of symptoms until operation was seventeen hours. No other serious surgical affection of the abdomen could be so early recognized. The first examination of the infant usually revealed the condition. The child was generally seized suddenly with severe abdominal pain, more or less pallor, shock, and relaxation. Vomiting usually occurred at this time. Later there was straining and blood and mucus appeared in the stools. This picture, together with the presence of an abdominal tumor, determined the diagnosis. After the first storm of pain was over the infant usually appeared perfectly well. Later the pain recurred and was of intermittent and paroxysmal nature, but it was not attended by the shock and pallor of the initial seizure. If the patient was seen during the calm period the diagnosis was apt to be mistaken unless a very careful history was obtained. Vomiting was rarely a prominent symptom until late in the disease; where it occurred early and was persistent it was significant of strangulation of the blood supply to the bowel. Rarely was it fecal. In every case of intussusception an abdominal tumor was present, but it was often difficult to palpate. The typical sausage-shaped tumor described by the textbooks was seldom felt early; when present it meant that the intussusception had progressed to a considerable extent. More often a rounded mass was felt and it might occupy any portion of the abdomen. It was generally quite movable and might resemble an enlarged gland. If the tumor could not be felt abdominally then bimanual rectal examination should be made. Under anesthesia one seldom failed to discover its presence. Later, in addition to obstruction and strangulation, toxemia developed, and the late picture was that which occurred in every variety of intestinal obstruction. Ileocolitus and the purpuric diseases had occasionally been mistaken for intussusception; in the former bile, feces, and flatus were passed and no abdominal tumor was present; in the latter hemorrhages occurred elsewhere than from the intestines as a rule, and his gave a clue to the diagnosis. The simplest, most successful, and only certain method of treatment in intussusception was early lapartomy with manual reduction of the invagination. While spontaneous reduction had occurred and recovery had taken place after sloughing of the intussusception, such results must never be expected or awaited. Like strangulated hernia or fulminating appendicitis, it was a condition demanding immediate operative interference. The operation should be performed as quickly as was consistent with safe and thorough work. As three-fourths of the cases occurred in the ileocecal region, the incision should be made through the right rectus muscle. Some operators preferred the median incision where the tumor was felt low down on the left side. In relieving the intussusception it was best to begin at the apex and to carefully "back up" to the point where the invagination started. If traction was made on the proximal end of the gut it was apt to be torn at the neck of the intussusception. If gangrene had occurred, or if reduction was impossible resection and intestinal anastomosis should be performed. In all early operations it was a good plan where invagination had occurred in the ileocecal region to remove the appendix, as it might in certain instances be a causative factor in the production of the obstruction. In closing the wound the layer sutures should be reinforced with through-and-through tension sutures.

BOOK REVIEWS

Practical Pediatrics. A Modern Clinical Guide in the Diseases of Infants and Children, for the Family Physician. By James Herbert McKee, M. D., Professor of Pediatrics, Medical Department, Temple University, Philadelphia, and William H. Wells, M. D., Assistant Professor of Obstetrics, Jefferson Medical College. With a Supplement upon Development and Its Anomalies. By John Madison Taylor, A. M., M.D. Associate Professor of Non-Pharmaceutic Therapeutics, Medical Department, Hemple University, Philadelphia. Two Volumes 1146 pages. 2 Colored Plates and 146 Illustrations including 238 figures. Octavo. Cloth $12.00.

The latest work on Practical Pediatrics has just been received from the press of Messrs. P. Blakinston's Son & Co., in two handsome octavo volumes, filling nearly 1200 pages. Volume I contains the following chapters: Fundamental Difference Between Child and Adult; Diseases Occurring at or Near Birth; General Hygiene of Infants and Children; Feeding and Food of Infants and Children; Diseases of the Gastro-Intestinal Tract; Diseases of the Peritoneum; Diseases of the Liver; Abdominal Tumors of Infancy and Childhood; Disorders of Metabolism; Diseases of the Pericardium; Heart and Blood-vessels; Blood Pressure Studies in Early Life; Diseases of the Blood; Diseases of the Respiratory Organs; Diseases of the Gastrourinary System, and Diseases of the Genital Organs. Volume II. contains the following subject matter: Diseases of the Nervous System; The Specific Infectious Diseases; Diseases of the Thyroid Gland; Diseases of the Thymous Gland; Diseases of the Skin; Diseases of the Ear; Conditions requiring Surgical Procedure, and closes with an appendix upon Development and its Anomalies.

This work represents the combined efforts of three prominent pediatricians of the city of Philadelphia and offers the last word, not only in contemporary findings, but also in the results of the combined experiences of the authors on the subject of conservation of infants and children, in and out of health. The authors present succinctly much more than a treatise on disease as it appears in the young; they have kept in the foreground of their purpose a presentation of factors making for, not only the recognition and repair of abnormalities and disturbances, but also prevention in the widest sense.

The writers present many salient points and fundamental principles of development, which will undoubtedly prove of great service to pediatricians, as well as to the general practitioner of medicine. The long experience of the authors as teachers and practitioners in their specialty peculiarly fit them for producing a practical work on pediatrics. They realize that pediatrics as a specialty has made more advancement during the past twenty years, than the whole subject of medicine has made in the past one hundred years.

This present work marks an advance in the science and practice of Pediatrics. Of the newer aids in medicine, that of blood-pressure in the young appears for the first time in a work on diseases of children. The authors, however, wisely give proper regard to bacterins, tuberculin, and serum treatment. The exact interpretation of the physiological action of drugs has been most successfully delineated, as well as the diagnosis and general principles in the treatment of deformities.

The authors have left nothing undone to make this new work thoroughly representative of the best and latest knowledge pertaining to the subject of pediatrics. A feature has been made of important methods of examination and therapy, and since young children cannot aid the diagnostician by describing their symptoms, much depends upon their expression. Accordingly, the highly artistic and true clinical pictures of diseases illuminate this work. We believe that "Practical Pediatrics" presents the most complete exposition of the world's best and latest knowledge on the subject of diseases in children. The authors devoted sufficient space to etiology leading up to a full consideration of the more direct and practical subject of symptoms, diagnosis and prognosis, including differentiation and treatment. One cannot examine this book without being impressed with the wide clinical experience of the authors and their explicit and definite therapy. The work is reliable throughout and can be safely recommended as one of the best exponents of American pediatrics.

Practical Therapeutics, including materia and prescription writing, with a description of the most important new and nonofficial remedies passed upon by the Council on Pharmacy and Chemistry of the American Medical Association. By Daniel M. Hoyt, M.D., formerly instructor in therapeutics, University of Pennsylvania; fellow of the College of Physicians; Assistant physician to the Philadelphia General Hospital. Second edition, revised and rewritten. Cloth binding, 420 pages. Price $5.00 net. St. Louis, C. V. Mosby Company. 1914.

The author in this book presents a brief summary of the physiological actions of drugs, laying particular emphasis upon their clinical applications, showing the importance of simple, rational prescribing, based on known physiological actions; and indicates the limitations, as well as the value of drugs in the treatment of disease.

This edition has been thoroughly revised, rewritten, and enlarged. It now includes, not only the important preparations of the U. S. Pharmacopoeia and the National Formulary, but also those of the New and Nonofficial Remedies, as promulgated by the American Medical Association.

In reviewing this new edition of Hoyt's Practical Therapeutics, we are impelled to call especial attention to the arrangement. At a glance the reader can get the drug, its physiological action, and in most cases, specific physiological action on different organs such as the brain, spinal cord, heart, arteries, skin, and intestines, the toxicology and its treatment, also the therapeutic indication and contraindication. We believe this is the only volume on this subject today that is so arranged.

Dr. Hoyt also gives the combination and value of most proprietary remedies and tells the dispensing physician what drugs he can use most satisfactory to himself and patient. In closing, we desire to call atention to the therapeutic index. It is a most valuable time saver to the busy man, who will find in this volume an encyclopaedia Brittanica on Materia Medica and Therapeutics.

Ten Sex Talks To Boys, by Irving David Steinhardt, M.D., author of Ten Sex Talks to Girls. Instructor in clinical surgery and Assistant Surgeon, Cornell University Medical School. Assistant in Pediatrics, Mt. Sinai Hospital, orthopaedic surgeon, New York Hospital, etc. 190 pages, cloth bindings, twelve illustrations, $1.00 net. J. B. Lippincott, Philadelphia and London.

The subject matter contained in this book was originally a series of lectures delivered before New York audiences and later published in this journal, and most gratefully received by its subscribers. A cordial reception of this series of lectures and its appreciation by the professor after publication in this journal, both surprised and delighted the author and in response to many requests he has revised and enlarged these lectures, incorporating new material which is now offered in book form. Dr. Steinhardt in his "Ten Sex Talks to Boys" has put the subject matter in the simplest, most straightforward and wholesome way. The knowledge contained therein should hold back ninety-nine out of a hundred boys from evil courses, provided it is placed in his hands at the proper time. Judge Lindsey, presiding in a juvenile court for fifteen years, says that there is hardly one child out of a hundred who has reached the age of twelve, and has not come in contact with some sort of sex experience. The judge says, in fact, "it is little short of crime in this day and age to withhold instruction from the youth on this important subject. The medical profession does not need to be told the need for this sort of wholesome, sane instruction for the adolescent youth, if the present appalling aftermath of ignorance and broken physical loss is to be done away with to any appreciable extent." The subject matter contained in this book is just what a family physician would like to say direct to a parent when called upon to advise on this question, and this book is the very best method of safe-guarding children against errors and vice.

Ten Sex Talks To Girls, 14 Years And Older, by Irving David Steinhardt, M.D., author of Ten Sex Talks to Boys. Instructor in clinical surgery and assistant surgeon, Cornell University Medical School. Assistant in Pediatrics, Mt. Sinai Hospital, orthopaedic surgeon, New York Hospital, etc. 190 pages, cloth bindings, twelve illustrations, $1.00 net. J. B. Lippincott, Philadelphia and London.

The subject matter of this book was originally a series of lectures delivered before the Hebrew Educational Societies in New York and Brooklyn, and later published in the New York Medical Journal. "How shall we protect our girls?" is the burning question of the day, especially during the recent past, when the country has been aroused to fever heat by the campaign against the 'white slave traffic,' with its accompanying revelations, dangers, and snares which encompass the footsteps of young girls, particularly those who have been forced into the business world.

Dr. Steinhardt in this little book makes it easy for the mother who does not know how to instruct her daughter by having her read this book, which is highly commended to the young girl for its sincerity, simplicity and directness, as well as its scientific accuracy. The idea that ignorance is essential to innocence is happily being excluded and physicians are in a better position than the laity to speak of the wreckage and disaster that results from ignorance and neglect from proper instruction on sex hygiene. We urge that this book be read in every home and by all those interested in the welfare, protection and progress in the young of human society.

Dysenteries. Their Differentiation and Treatment. By Leonard Rogers, M.D., F.R.C.P., B.B., F.R.C.S., C.I.E., I.M.S., Physician to the Isolation Ward (Cholera and Dysentery) Medical College Hospital and Professor of Pathology, Medical College, Calcutta. Pnblished by the joint Committee of Henry Frowde and Hodler & Stoughton, at the Oxford Press Warehouse, Falcon Square, London, E. C. 1913. Price, $3.75.

Dr. Leonard Rogers of the Indian Medical Service has given to the profession a valuable work on dysenteries, their differentiation and treatment. We find the work one of the most valuable at our disposal. Dr. Rogers has had an extensive experience in India and speaks authoritatively on the subject. The author goes into the treatment most carefully. He also gives a very graphic description of the remote complications of dysentery which is a most valuable part of the work. Not only does he describe the amoebic and bacillary dysentery but he also considers the dysentery due to the Balantidium coli: the Bilharzia haematobia as a cause of dysenteric symptoms; the role of the tricomonas intestinalis; the relation of intestinal worms and diarrhoea alba or sprue. In short the work comprises all that is known about these most distressing conditions and we heartily recommend it to the profession.

Treatment of Chronic Leg Ulcers. A Practical Guide to its Symptomatology, Diagnosis and Treatment. By Edward Adams, M.D., Instructor of Surgery, New York Post-Graduate Medical School and

Hospital; Attending Surgeon to the German Hospital, O.P.D.; Fellow of New York Academy of Medicine; Fellow of the American Medical Association, etc. Cloth, 127 pages, with 14 illustrations. Price $1.00. New York: The International Journal of Surgery Co., 1914.

While this book contains little that is new, it is a very useful guide to the diagnosis and treatment of these often perplexing cases. As the author says in the preface, the student or the general practitioner, who sees comparatively few cases, often has to search through the large text-books on surgery to find adequate descriptions of these ulcerative conditions; and this book should serve a very useful purpose in furnishing the desired information in an easily accessible form. The essential points in differentiation of the various types of ulcers are well brought out, and the most satisfactory methods of treatment are clearly indicated. We are glad to see that the necessity for a properly applied bandage in the treatment of all these ulcers has been strongly emphasized; as an adjuvant to the treatment of leg ulcers.

LITERARY NOTE

Be we financiers, industrial worker, navy, scavenger, or merely a gentleman, we all suffer to a great or less degree from the ills which our vocations or avocations engender. Just how to prevent, ameliorate or cure these but partly understood ills, should no longer be a puzzle to the man, employer or physician because a reliable and essentially practical book is soon to appear, under the joint editorship of Dr. George M. Kober of Washington, D. C., and Dr. Wm. C. Hanson of Boston, Mass. Among the contributors are such authorities as Sir Thomas Oliver; Legge (London); Teleky (Vienna); Devoto (Milan); Edsall (Harvard); Alice Hamilton (Chicago); etc., etc.

P. Blakiston's Son & Co. Philadelphia, will publish the volume.

THE SUMMER BEVERAGE QUESTION.

The advent of summer forces the problem of the hot weather beverages upon the physician's attention. In a truly bewildering variety, they tempt eye, palate and imagination, and people throng around the fountains like bees to a honey jar.

It may all be merely habit—but it is a habit that has certainly come to stay. Physicians must accept that fact and realize their duty lies in educating and directing the public towards an intelligent understanding of what is distinctly wholesome among these beverages and what may be pernicious.

The most superficial view will reveal at first glance the overwhelming popularity of Coca-Cola. It stands a giant among dwarfs and compels the enquiry—"What is Coca-Cola and how has it acquired so firm a hold upon the public taste?"

The obvious answer is that Coca-Cola must have been able to supply in a distinctive and wholly acceptable manner just what the thirsty public most desire in a summer beverage It is delicious, thirst quenching, cooling and refreshing to a degree not found in any other drink. It is, moreover, unquestionably wholesome and beneficial. Pure water, fruit flavors, refined sugar and a small amount of chafein are its constituents.

It is thus closely allied to tea and coffee, the most widely-used caffein bearing beverages. It is a stimulant only as tea and coffee are spoken of as stimulants—it simply and naturally refreshes in summer heat and relieves fatigue.

Coca-Cola has been spoken of by a few irresponsible people as habit-forming and harmful, but the most searching investigation has failed to discover any proof of this. Insufficiently informed about the physiological value of chaffein they have seized upon its presence in Coca-Cola as a pretext for condemning the beverage.

The verdict of all the leading chemists and pharmacologists who have studied caffein and experimented with its use under all conditions is to the effect that it can have no injurious physiological effect, that it is a natural stimulant without any secondary or depressant results.

PEDIATRICS

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EDITORIAL

THE PHYSICIAN'S DUTY IN DIRECTING THE DIET OF BREAST AND BOTTLE FED INFANTS

As the season of the year has arrived when digestive and intestinal disturbances in infants and small children become prevalent, we deem it our duty to call attention to this subject and to impress upon our readers the great importance of the necessity of giving careful study to the baby's diet.

The problem of artificial feeding is one of growing importance, especially to the family physician and obstetrician, the latter of these is especially derelict in his duty if he fails to inform himself upon the great advances which have lately been made in this direction. The cause of much of the indigestion, inanition and marasmus seen during infancy is laid during the first few weeks of life, but the importance of starting the diet right from the very outset is not yet sufficiently appreciated. An attack of indigestion must be regarded as a serious misfortune for a child; the younger the child the greater the misfortune. A single careless feeding may produce an acute indigestion which will be the starting point of a long series of digestive disturbances. A few weeks of improper feeding may so derange the digestive processes that the infant does not regain its normal digestive power during its first year.

The error is quite too common of looking upon the body as a machine, any derangement of which will be set right by simply removing the cause. The human body is not a lifeless machine, but a combination of living tissues, each of which has its own functions to perform. Stopping the original cause of disturbances does not, therefore, usually stop the symptoms. A child that has been improperly fed can rarely be set right at once by the administration of proper food. If the indigestion is due to bacterial action, or to a vegetable fermentation, it will probably continue for a certain time under the most favorable feeding, because the germ or the ferment remains to act upon everything that is introduced into the stomach. An intestinal catarrh, once begun, is very slow and difficult of cure, and will prolong the indigestion.

When the digestive secretions are impaired, or undergo any decided change, they do not at once recover themselves or adapt themselves to changed conditions, even if those conditions are perfection itself. The nervous system, notably that portion which presides over the digestive functions, readily acquires habits and pecularities of action which continue after the causes which generated them have been removed. The debility and anemia which quickly follow in the train of improper diet are felt by the digestive organs in common with the rest of the body and impair their action long after the cause is removed.

Error is constantly being made in allowing new-born babies to have too much food, to have it at irregular intervals, and without proper preparation. One of the most common errors is the use of too strong milk mixtures. During the first two weeks the baby should be fed every two hours by day and should not have more than two feedings between 10 p. m. and 7 a. m. With the beginning of regular feeding on the third day, the amount of each feeding should not be more than one ounce, which may be increased to two ounces by the fourteenth day. In exceptional cases two and one-half ounces may be given.

Even in the cases of breast-fed babies the doctor has an important duty to perform in giving rigid instructions regarding regularity of nursing, the duration of each feeding, and the management of the breasts. The importance of engendering right habits in the breast-fed infants is almost as great as in the case of the artificially fed. The well-being of the infant as well as the well-being and comfort of the mother, depend greatly upon the habits formed during the first few weeks. Whether the baby be breast-fed or bottled-fed, the physician is derelict in his duty if he neglects to start the diet right.

HOT HOUSE CHILDREN

We remember reading somewhere some years ago, in a non-professional publication of some sort—we would gladly give credit for it if we could recall the name, although the tale was not even then new—the story of a little boy who had been brought up in a most hygienic manner by a scientifically minded mother. The nurse's breast (the mother was an invalid and could not nurse her child, hence her solicitude that hygeia should watch over her son's bringing up) was always carefully washed in boiled water before the child was put to it, and later no raw food, not even raw milk, was allowed to pass the boy's lips. His meals were carefully regulated and were always at the same hour, and by no earthly chance did he ever get hold of any bread and butter and jam between times. He grew along for several years, being fairly well, but suffering now and then from digestive disturbances, much to his anxious mother's mystification. When he was about twelve years old he went on a visit to his grandmother who had had a lot of wretched old-fashioned notions about boys and their stomachs. In her ignorance of hygiene and alimentary asepsis she fed the child on pies and doughnuts and other poisonous confections, and he died within a week of his return home. This is the story in substance, though it was told with greater detail and much more interestingly. We, of course, do not vouch for its correctness; indeed, we have no idea that it ever happened just as related. But although the product of a layman's or laywoman's imagination, it contains the suggestion of a truth which we are in some danger of forgetting. Coddling is often, if not always, pernicious. We cannot avoid danger by running away from it. Some day we must face it, and if then we are unprepared by having met and overcome smaller risks we must inevitably succumb. A child brought up in a hot-house will perish in his first snow storm, and a stomach which has never had any harder task than to dispose of peptonized milk will collapse in a railway eating house.

GONORRHOEA IN GIRLS

It is well known, at least of late years, that there are frequently epidemics of gonorrhoea among children, especially girls in public institutions. Even in private practice it is occasionally observed that children are affected through the use of the same towels, beds or water as their parents, older brothers or sisters or servants who may have gonorrhoea. It is a delicate condition of affairs. One cannot well tell his diagnosis without implicating some one, and often his diagnosis would not be believed if told. However, he must at least advise the necessary precautions to prevent a spread of the disease. Bendig, of Stuttgart, in the Muenchener Medicinischer Wochenschrift, relates epidemics of this disease which occurred in two institutions for girls. Introduced by a girl aged eight, fifteen out of forty girls contracted the disease. It was the practice for two children to bathe together in the same water and to use the same towel indiscriminately. When the disease was discovered the children were conveyed to the Stuttgart hospital. The external genitals were found to be in a swollen state, the vulva was occluded by the swollen labia, and a stream of pus appeared when the latter were separated. The children were feverish and complained of prickly sensations of strangury, and sometimes of abdominal pain. The treatment consisted in the administration of santal oil and covering the vulvae with cotton wool to keep the children from touching the parts and to avoid the danger of gonorrhoeal opthalmia. Irrigations of the vagina with solutions of permanganate of potash and protargol were employed and the urethra was brushed with ichthyol. In some of the children the acute symptoms disappeared tolerably soon, though the discharge became chronic and was accompanied by gonococci. Where treatment was interrupted acute symptoms recurred in about a fortnight. The treatment was then resumed and plugs of cotton saturated with protargol and glycerine were placed in the urethra from one micturation to another. The treatment was successful, but in some instances relapses recurred even ten weeks after the patient left the hospital. All recovered completely, though one required continuous treatment of 279 days. No complicating ophthalmia or endocarditis or perimentritis. He recommended that children sent to asylums be examined for gonorrhoea, a difficult thing to ask, and gave the self-evident wise advice that children use their own towels and water in bathing.

FAITH CURE

The cry of the innocents comes from a western state where the members of a community of faith curers are sacrificing their children to their superstition. According to newspaper reports diphtheria has been raging in a certain city, a number of the inhabitants of which are adherents of this pernicious heresy. and the physicians have in many instances been unable to reach the little sufferers to give them relief or to prevent the spread of the pestilence by isolating the sick. The fanatical elders meet about from house to house, praying over the sick, and then return to their homes carrying the contagion to their own children. In one case a physician and a nurse had watched by a child day and night and when he seemed to be convalescent had left him to carry succor to others. But no sooner had they left the house than the father, who had been kept somewhat in check during their stay, moved to decent behaviour by the sight of their devotion, threw the medicines out of the window and called in the neighbors to pray. The child died the following day of suffocation. Fifteen other children are reported to have suffered the same ill treatment from their parents. A story comes from Russia of a woman who placed gun powder on her child's eyes and ignited it, having been told by an old woman of the village that that was a sovereign remedy for the sore eyes, from which the child was suffering. We gasp with horror at the brutal ignorance of the peasants in far-away Russia. The results of the Russian's superstition were spectacular. those of the American's fanaticism are murderous.

PEDIATIRCS

ORIGINAL ARTICLES

THE TEACHING OF INFANT CARE AND MANAGEMENT TO GIRLS IN PUBLIC ELEMENTARY SCHOOLS[*]

BY MISS JANET CAMPBELL, M.D., M.S.
Medical Officer to the Board of Education
Liverpool, England

The Board of Education have for some years past encouraged the teaching of infant care and management to elder girls in public elementary schools. In 1910 they issued a Memorandum[*] on this subject, and since that time have consistently endeavored to promote and extend the provision of facilities for affording girls some practical knowledge of the care and management of little children.

At the outset reference may be made to the advisability of making any attempt to train girls of 12 to 14 years in their future duties as mothers. Objection is sometimes raised on the score of their youth. In a secondary school one would probably not choose this age period for a course of instruction in "mothercraft," but at an elementary school the situation is wholly different, and in many cases the teaching must be given then or never. It is not possible to persuade the majority of working-girls between 14 and 20 years to attend voluntary courses in hygiene, and unless facilities are provided at the ordinary school there is no means of ensuring that all girls shall have an opportunity of acquiring even a minimum of knowledge before they marry. Some things that they are taught will doubtless be lost, but much they will remember. The fact that these elder girls usually find the lessons extremely interesting, and that they are already accustomed to act as nursemaids to their younger brothers and sisters, fixes these matters in their memories and lays a sound basis for subsequent experience. Moreover, the possession of the "mothercraft" notes taken at school will also help to bridge the gap between school and marriage; the foundation at least of a practical knowledge of domestic hygiene will have been laid, and it is hoped that sufficient teaching may be given in this way to stimulate the girl to seek further advice and help when she has children of her own to bring up.

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[*] Read before the National Conference on Infant Mortality, Liverpool, July 2-3, 1914.

[†] Circular 568, Memorandum on the Teaching of Infant Care and Management in Public Elementary Schools (1910).

It is obvious that teaching of this kind must be organized gradually and cannot at once be made compulsory or universal. If badly or unsympathetically given, little good will follow its introduction. Some alteration and rearrangement of the ordinary curriculum is always necessary, and unless a head mistress is genuinely interested in the matter and anxious to make the teaching thoroughly successful, she should not be required to undertake this form of instruction. At the same time the attention of Local Education Authorities is gradually being drawn to this question, and both Authorities and teachers are coming to realize the importance of providing a girl with some training in these matters before she leaves the elementary school. In many districts the Education Authority are prepared to allow individual teachers to arrange courses of infant care in their own schools; others have gone so far as to encourage the introduction of this subject so far as practicable into all schools in the area; some Authorities have organized special classes to train the teachers to conduct such lessons in their schools; while in yet other cases arrangements have been made for instruction to be given in outside institutions.

A number of questions present themselves for consideration when a scheme of this kind is in contemplation. In the first place, shall the teaching be given in the school itself, and, if so, shall it be undertaken by a teacher on the ordinary staff or by a visiting teacher who has had special training and experience? Secondly, if it is decided not to undertake the teaching in the ordinary school, shall arrangements be made for instruction in infant care as part of the instruction in domestic subjects or housewifery, or is it better to arrange independent classes in connection with a creche or School for Mothers? Again, is it essential for useful teaching to have a baby, or can a large doll suitably be used for demonstration purposes?

These and other questions will largely be determined by local circumstances and facilities, and although it is not possible here to give a detailed account of the arrangements in different districts, it may be useful briefly to suggest a typical course of instruction. Probably the most satisfactory arrangement is to have a preliminary course of infant care taken in the elementary school by a teacher on the staff, and to follow this by a series of lessons at a creche or other institution where the girls can learn to handle the real baby. It should almost always be possible to arrange the course at the school, though the further teaching will not always be practicable.

Instruction in the Elementary School

The great advantage of using the elementary school rather than a more specialized center is that it is possible for every elder girl in the school to take part in the lessons, and the members of the class are not limited to selected children. The dull or backward girl needs this teaching at least as much as her more intelligent neighbor, but is less likely to be chosen if facilities are available for a few children only. Another advantage lies in the greater amount of time which it is possible to devote to the subject. A special course may consist of, say, half a dozen lessons, whereas the lessons at the school may go on throughout the whole year. Frequent repetition with suitable variety of form is essential if the main facts are to be thoroughly grasped, and this is not practicable in a short course. Again, in many elementary schools there is a mistress on the staff who is capable of undertaking this teaching, and when this is the case a teacher who knows the girls personally is more likely to secure enduring results than a visiting lecturer, even though the latter may possess a wider knowledge of infant care. With the teacher on the staff the instruction in infant care can be more fully co-ordinated with allied subjects, such as hygiene, home management, needlework, etc., and can be made an integral part of the usual school routine. Probably the most effective way of organizing instruction in mothercraft is to take it towards the end of a course of hygiene and home management, which may be commenced, say, in Standard III, or even earlier. If the girls already have some acquaintance with matters of personal and domestic hygiene, they are ready to apply this general knowledge to the individual baby, and are better able to appreciate the reasons for the various methods and practices which are taught. One lesson a week is usually given, and this may continue for a term, or more often perhaps throughout the year. Lessons in needlework, arithmetic, etc., may be used to illustrate points discussed in the mothercraft class.

As a rule the teaching is given to girls of 13 years and upwards. It is clearly desirable to postpone it as long as possible, but in areas where the girls tend to leave school early it is well to consider girls over 12 1-2 years as eligible. The size of the class is important, and when practicable it should not exceed thirty girls. If the class is large and unwieldy it is difficult to arrange for each girl to obtain sufficient personal practice, and if only one or two are able to demonstrate the attention of the others may flag. A method of retaining the interest of a large class is to ask the onlookers to write criticisms of the performance, these criticisms being afterward read out and discussed.

The teaching usually includes lessons dealing with washing and dressing a baby, preparing its food, providing a suitable cradle, and fitting a simple baby's basket, appropriate clothing, etc. Sometimes an account is given of simple ailments and disorders. If attempted at all, this should usually be limited to such matters as "thrush," digestive dusturbances and epidemic diarrhœa, the aim being to teach the girls to handle the normal infant in a proper way rather than to encourage her to look for or treat diseases. Every endeavor should be made to render the lessons not only permanently useful but capable of easy application to the circumstances of the home. Model long clothes are often made by each girl, paper patterns of the garments being retained by her; if time permits, short clothes may also often be made. The value of natural feeding is explained in simple fashion, as well as the ordinary methods of hand feeding when this is unfortunately necessary. The girls learn to keep the bottles clean, to prepare the food for healthy babies of different ages, and also to make whey, albumen water, barley-water, raw-meat juice, etc., which their mothers are seldom competent to do correctly. Some instruction as to the feeding of a baby after weaning is also valuable.

The necessary equipment is not elaborate. The most expensive item is perhaps the doll. This should as nearly as possible represent a baby, the ordinary small long-haired doll being practically useless for this purpose. Occasionally it may be found possible to secure a baby for special lessons, but as a rule the doll alone will be available, and it is therefore important that it should be as large and life-like as may be. Besides the doll, model garments, a cradle, bath, feeding bottles, etc., will be needed. Children are often able to bring various articles from home to supplement the school equipment and this they should be encouraged to do.

The active sympathy of the parents should be enlisted, and this is not difficult to obtain. Mothers are usually both interested and pleased when they hear what their daughters are learning, and cases are not infrequently met with where the daughter has been able to give practical help to her mother in matters of feeding and clothing the baby.

In some ways "mothercraft" teaching is more easily organized in urban than in rural schools, but it can be introduced into the schools of a county area without much difficulty, as has been shown in Derbyshire and Surrey. Some of the earliest attempts to promote this teaching were made in Surrey, while in Derbyshire, since the appointment of an organizing inspector of home management three years ago, 300 schools have included infant care as part of the ordinary curriculum.

The need for special training in infant management experienced by many teachers anxious to introduce this subject into their schools is usually met by the establishment of classes intended for this purpose. Many such classes are organized in London for example. In various parts of Surrey classes are held by the county instructors, and in Lancashire similar classes are conducted by two of the medical women on the staff of the School Medical Officer. The instruction given in these classes should be simple and homely, and should be planned to enable the teachers to give common-sense teaching to their girls and to help them to devise methods of making this teaching as practical as possible.

Instruction Elsewhere Than In the School

When practicable the preliminary instruction should be followed by a more specialized course of training carried out at a creche or similar institution. Here the girls can learn actually to handle the real baby, and can practice the various operations of washing, clothing, feeding, etc., under good hygienic conditions. They can thus acquire a high standard of what infant management should be. Classes at a creche must of necessity be small, and a large number of schools have no such institutions in their neighborhood; a less satisfactory but decidedly useful method which it is sometimes possible to adopt is to arrange for a qualified nurse or midwife to give a series of demonstration lessons with a baby. This has been done at Folkstone, for example, where arrangements were made for girls from an elementary school, accompanied by their class teacher, to visit the house of a local midwife for a few lessons in washing and dressing a baby. It should be emphasized, however, that the value of practice or demonstration with a baby is greatly enhanced if the girls have some previous knowledge of infant management, and the fact that a course of lessons has been arranged at a creche does not absolve the school teacher from responsibility.

Instruction at a creche has been organized at Acton, Hanwell and Finchley, among other areas. Girls of 13 to 14 years are selected and go in small classes of about six. Six or eight lessons are given by the matron of the creche, but the class teacher is usually present or supervises the notes of the lessons on return to school. Each subject taught is demonstrated by the matron, and the girls themselves afterwards carry out the details of the work under her supervision. Lessons last as a rule from one to one and one-half hours, and include various points of practical infant hygiene. The drawback to teaching at a creche lies in the fact that the matron, though competent to carry out her own work, is not always able or willing to teach children. Moreover, the accommodation is frequently too limited to admit of systematic class teaching even when the classes are small. At the same time the practical instruction obtained at a creche, when the conditions are suitable, is of great value, and the use of creches for the purpose should certainly be extended.

Instruction at the School for Mothers

The Swansea Mothers' and Babies Welcome affords a good example of arrangements for the teaching of mothercraft in connection with the School for Mothers. Neighboring elementary schools send elder girls to practical classes in infant care, which are held three times a week. The children are selected by the head-mistresses, and they attend twelve at a time once a week for five weeks. Each lesson lasts for three-quarters of an hour and is conducted by the superintendent of the Welcome. A short talk is followed by a practical demonstration of the subject under discussion. The girls themselves take part in these demonstrations and are taught how to handle the baby.

Now that the number of Schools for Mothers is increasing, and the facilities which they afford for providing education are being extended and enlarged, much more will no doubt be done by these institutions to promote the training of girls as well as the education of married women. Taken all around, Schools for Mothers would seem to be more suitable than any other institutions to supplement the work begun at the elementary school. The accommodation is usually better than that available at a creche. The staff, and particularly the superintendent, is accustomed to give simple teaching, and is fully acquainted with the conditions obtaining in the homes from which the children come. The confidence of the mothers attending the school has already been gained, and it should be easy to secure a sufficient number of babies for demonstration. The equipment of the ordinary School for Mothers is suitable for teaching small classes of children, and the organization of such classes should give rise to little difficulty. The training of girls in the essential principles of mothercraft would substantially increase the value of the work already being done by the Schools for Mothers in training the mothers themselves in the care and management of little children. It therefore seems most desirable that Schools for Mothers should give further attention to this matter, and should endeavor to co-operate with Local Education Authorities in the provision of facilities for such teaching.

SCURVY

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Scorbutus, otherwise called in England, "Barlow's Disease," is probably an acquired disease, with a "hemorrhagic diathesis" from improper feeding causing intestinal putrefaction and an alkaline condition, or as is thought by some—toxemia.

Cases which I have seen seem to have at the beginning an alkaline fermentation. At any rate there is a disturbance of the general nutrition, and it is therefore classed among nutritional diseases.

History

So long ago as the middle of the seventh century Glisson described scurvy as being complicated with rickets. Later, in 1883, Doctors Barlow and Cheadle, who were then connected with the "Great Ormond Street Children's Hospital of London," made a closer study of the disease. and to them we are indebted to much of the knowledge of scurvy up to the present time. They made it plain that scurvy is an entirely different disease from rickets. In 1897 a commission appointed by the American Pediatric Society collected 379 cases and published a report in 1898. made up of cases recorded by such men as Holt, Griffith. Rotch and Winters.

Occurrence

Pfaundler and Schlossmann say that the disease is distinctly an affection of artificially fed children and has greatly increased within the past thirty years.

Boys are more frequently affected than girls. Dr. Still of London says that 80 per cent of cases seen by him were between the ages of six and ten months. Faundler and Schlossmann report one case of four months, 20 cases eight months old, and 3 cases 24 months old, showing a gradual increase up to 8 months, and decrease thereafter to 24 months.

Dr. Sill of this city reports a case at 3 1-2 months, and an increase to the fifteenth month, and final decrease to 2 years. showing that he saw more cases at the age of 15 months instead of at 8 months, as stated by Faundler and Schlossmann.

The disease develops gradually. Some doctors have thought the development sudden, due. no doubt, to the failure to make an early diagnosis. For instance, a child which seems to be doing well, in most cases fed on patent or cooked foods, becomes ill; shows loss of weight; apparent loss of motion; takes its food badly; becomes fretful; cries if handled; especially when diapered; slight digestive disturbances; has pallor of skin and mucous membrane; tenderness and swelling not severe; gums may be healthy; no temperature; anemic—this, together with a two or three day anti-scorbutic treatment, will prove the case scurvy. As the case develops and symptoms of swelling and tenderness become more prominent. we may be called upon to make the diagnosis between rheumatism and scurvy, or scurvy and traumatism.

Here it becomes important that the surgeon know scurvy, for he may be called upon, especially if he is doing surgery on children, as there have been such mistakes as a surgical operation for osteo-sarcoma done on a scurvy case, and legs put in casts for fractures.

Last summer I was called to a case and told that they thought the baby had fallen. On going over the case, which cried when touched, I found both legs affected, and indigestion symptoms; no teeth; age 9 months, and fed since 2 months old on a formula a little low in fats, yet a good food. They had been warming the food a little too much just before feeding. This is a danger, for some old lady will come along and tell the mother she must always warm the food well before feeding, and that means, generally, brought to boiling point.

In this case, knowing that the formula was not a bad one, I made no change in it, but instructed the mother against warming too much; gave orange juice, a teaspoonful every 4 hours, and in 3 days the symptoms had all disappeared.

I also saw 3 cases within the past year which had been diagnosed rheumatism. In another case I thought the formula too low in fats. Holt says he has seen cases which seemed to be low in protein. It has been thought to be caused by stale food; or canned goods in adults. The Artic explorer, Nansen, says that in his trip not one case of scurvy developed. He attributed it to thorough sterilization, but which I believe due to low temperature.

Causes.—Many different causes are suggested, but I believe we have not yet found the real cause, unless it be an increased alkaline condition.

As in rheumatism we have an acid or toxic condition, so in scurvy my belief is that we have an alkaline or toxic condition. I believe that rheumatism is caused by acid condition, and my experience is that acids, such as orange juice will tend to increase rheumatism, but orange juice is a specific for scurvy—therefore as the cure for one is the opposite of the other, I am led to believe that if one is an acid, the other must be an alkaline. Again, as proof of this, we have mashed potatoes as a cure of scurvy and as one of the causes of rickets, which is, as you all know, a disease with an acid condition, sour stomach and strong acid perspiration.

Dr. Sill reports, under the heading of "Sterilized or Boiled Milk," that the changes made in the milk by cooking, sterilized or pasteuring, are a dimunition of the amount of lime and free phosphoric acid with an increase of insoluble calcium phosphate which is not absorbed, and precipitation of the anti-scorbutic citric acid, leaving the milk in all probability alkaline.

Corlette showed that calcium citrate of milk is in the amorphous form and easily soluble, but when boiled becomes crystalline, which is less soluble.

Chapin, in his "Theroy and Practice of Infant Feeding," page 70, says that Babcock, Russell, Vivian and Hastings found that boiled milk would not coagulate with rennet, but would if acidified.

It is stated by one writer that it is not due to food deficient in alkalinity; and there is no diminished alkalinity of the blood and no improvement on feeding alkaline foods or by giving large doses of lactate of soda.

During the seige of Port Arthur, there were a very large number of scurvy cases. A coccus was found in these, which, injected into animals, produced hemorrhagic lesions, and the coccus was reproduced from the blood of them, hence this cocus came to be regarded as the cause of the scurvy by the doctors in charge.

The main reason for disbelieving the toxic or germ theory is that cooked foods (sterilized or pasturized milk inclusive) is the principal cause of scurvy. Under the toxic theory, cooked foods should be a preventive instead of a causative. Again, as we are finding that there are breast-fed cases, I do not believe that it can be due to a toxic condition in the mother, but that it may be increased alkalinity of the mother's milk. If it were a toxemia it would seem that a breast-fed case should not have it; or again, on boiling we would have a preventive. So it seems to me that it must be a change in the food which comes from the mother, probably through the change in the milk, and not heredity in any way, but an alkaline condition causing an increased alkalinity of the milk.

I have seen during the past 8 months 4 of breast-fed cases, 3 in clinics and one in private practice.

Again, change of the food does not as a rule cure the case without the orange juice to overcome the alkaline condition. Again, the remedies are all acids, or are acid producers.

Cases appear in well-to-do families as well as in the poorer classes, and probably more often because they are more apt to feed the baby on the bottle.

In the 379 cases reported by the American Pediatric Society were found to be due as follows: Sterilized milk, 68; sterilized milk combination, 107; pasteurized milk, 16; raw milk, 4; breast-fed, 10; proprietary foods, 246; condensed milk, 60.

Griffith says that scurvy is due to something lacking in the food or some harmful element present and such influence in operation for weeks or months. He also says that there must be an individual predisposition. He mentions seeing a case of twins where both developed it, probably due to their being fed the same kind of food.

I also believe that if it occurs in the same family at the same time or at different years, that it is still due to that something in or lacking in the food or change in the food (alkaline), not to heredity or individual predisposition.

Malnutrition may lead to scurvy.

Some think scurvy is a ptomaine poisoning; but if so why does it occur in breast-fed cases?

Again, it seems to be the lack of an anti-scorbutic element, as an acid to neutralize the alkali.

It is claimed hydrochloric acid will cure cases, therefore it does not need to be a fresh acid.

Enzyme Theory.—Against this theory, is destruction by heat; a breast-fed baby; cooking of potatoes and greens does not destroy the anti-scorbutic properties.

Ferment Theory.—A pig fed on fermented barley got scurvy and when fed on unfermented barley got well.

Koplik saw two cases of high fat feeding (7 per cent.). Too much sugar has been thought to be a cause.

Pathological Changes.—Increased vascularity. Hemorrhages in various structures, as pereosteum, bones and muscles. Most important and most characteristic are the subpereosteal hemorrhages of the long bones of the lower extremites, as Femor lower end, but may be found on almost any bone of the body. Extravasation may be found between the muscles or in the cellular tissue, in some cases around the joints. May have separations of the epiphysis from the shaft, generally at the lower end of femor or tibia. Here lies the danger of the case being diagnosed fracture. And here is where the X-ray picture comes in to help to make a diagnosis.

The bone lesions are somewhat similar to rickets, but there is a difference in the tendency to hemorrhage, and difference in the blood and blood vessels.

Proptosis is seen in 10 per cent of cases, due to hemorrhages in the roof of the orbit, which pushes the eye ball forward and downward. The periosteum may be thickened and vascular and oedematous. Hemorrhages into the marrow of the bones, forming clots; cellular part of the bone may be absorbed and rarified, and thereby produce thinning of the bones. May have hemorrhage at end of long bone and between it and the epiphysis.

May have the same changes at the cartalagenous junction of the ribs and sternum. However, these changes show no evidence of inflammation. There may be ecchymosis, and hemorrhage about the joint. Changes in the gums appear as in report of American Pediatric Society. 313 out of 379 cases, such as swelling, congestion, bleeding, sponginess, ulceration Bleeding in 188 of the 379. Ulceration in 91 of the 379.

It seems as though the teeth had a little to do with the lesions on the gums, as in the report just above mentioned there were no teeth in 45 cases, but an affection of the gums in 24 of these cases.

Visceral changes due to hemorrhages and anemia. Hemorrhages in hard palate, throat, stomach, intestines and bladder, extravasation in lympatic glands, lungs, liver, spleen, kidneys brain and pleura. May have albumen and blood in the urine from the kidney, not meaning nephritis. There were cutaneous hemorrhages in 182 cases of the 379, most often of the eyelids. Changes of the blood not diagnostic. Haemoglobin may be as low as 40 per cent. Red cells low. Slight leucocytosis.

Today there is thought to be some change in the blood and blood vessels not well understood. The osteoblasts are not affected. So we have a similar condition to rickets: an increase of bone cells but no ossification; something wrong with the calcium salts again, probably too much. Diaphysis shows large spaces with irregular margins instead of the fine spongaosa.

Picture

Symptoms.—First thing noticeable is the baby crying when handled, which in these cases indicates pain. In the report of the American Pediatric Society pain was noticed in 314 out of the 379 cases, and in 145 it was the first indication. This pain seems to come on suddenly, because of the failure to notice the digestive disturbances which preceded it. By the parents it is often thought to be traumatism or rheumatism. Of the cases seen by me in the past two years, in two cases I was informed that the child had fallen and hurt its leg. In three cases the parents said the child was suffering from rheumatism. In three cases there had been a diagnosis of rickets.

The pain on motion is so severe that merely approaching the child, will cause the child to cry.

The next thing generally noticed is the position of the child: the failure to move the limb (or pseudo-paralysis), and here is where the case may be mistaken for Anterior Polimyelitis which was true in one case seen by me.

The next symptom generally noticed is swelling of the leg or arm whichever is involved. This swelling is due to hemmorrhage occurring beneath the periosteum. The skin over the swelling does not generally show much of any change.

Next is generally noticed anemic condition and some oedema of the parts involved. Appetite poor and usually some digestive disturbances: Am. Ped. Soc. Report. showed previous digestive disturbances had existed in 1-4 of the cases. I believe symp. of indigestion to be among the first symp. in nearly all cases

Diarrhea or constipation; Little or no fever.

By this time we are generally looking to find out the state of nutrition of the child, and generally discover the patient has been fed upon cooked or partly cooked food, which is not always the case however, as I have stated before. In advanced cases we always see a general mal-nutrition.

Next we examine their mouths, finding the gums swollen; spongy; bluish purple in color around the teeth.

Hemorrhages such as are found beneath the periosteum of the shaft of the long bones, may be found on other bones in different parts of the body. Also hemorrhages such as are found in the gums are found in other parts of the body, underneath the skin in the form of petechiae; or quite commonly the eyelid, producing so-called blackeye, and is often diagnosed as a bruise; discoloration, most common on the upper lids: may have proptosis of the eye. May also have hemorrhages of the bowels.

Hemorrhage of kidneys is quite an important symptom in the diagnosis of scurvy, and is believed by some to be found oftener than the affection of the gums. I have seen it in four cases.

May have bleeding of gums and some ulceration.

In report of Am. Ped. Soc. the involvement of the gums was the first symptom noticed in 42 cases: and was a symptom of 313 cases out of the 379. The cases show more frequent involvement of the gums where there are teeth present then where there are not; probably due to the fact that most digestive disturbances come after the age for the beginning of cutting teeth.

Haematuria was found by Huebner in 10 per cent. of the cases, while the Am. Ped. Soc. found 182 out of 358 cases. Dr. Still of London found it in 6 per cent. May find albumen in some cases. Also may find casts. May have hemorrhage of the mucous membrane quite common in the hard palate. May have nose bleeding, may be pale, not necessarily loss of weight. Position of legs, flexed at the hip and knee, also everted.

Scurvy is often associated with Rickets. In the Am. Ped. Soc's. report this was noticed in 45 per cent. of the cases. Sometimes the Rickets seem to preceed the scurvy. Both being without a doubt a nutritional disease, yet Scurvy shows tendency to hemorrhages and is easily cured by fresh food and fruit juices, while in Rickets it is not so.

Diagnosis:—It is generally easy enough with a good history and symptoms well studied to make a diagnosis of scurvy. The diagnosis points are.

Anemia:—Which does not mean anything without other symptoms.

Indigestive disturbances (such as are produced by patent foods.) alkali.

Constipation:—Frequent in my experience.

Pain:—Especially on motion; and without other symptoms could not make a diagnosis.

Tenderness of the limbs.

The nature and location of the swellings on shafts of the long bones.

The age.

History of feeding.

History of Development of Lesions.

Purple Discoloration of Gums.

Effects of Anti-Scorbutic Treatment.

Tendency to Hemorrhages.

Haematuria.

It is very important to make the diagnosis early; and watch should be kept for babies fed on cooked foods, slightly anemic, with tenderness at the epiphyseal ends of the long bones. We should have in mind Barlow's disease.

However, to diagnose a mild case of Scurvy in a baby, without teeth, which is a seemingly fat and healthy, except for a little digestive disturbance, and fretfulness, especially on disturbing the child without any apparent anemia, no fever, no gum symptoms, and little or no swelling of the limbs.—it becomes quite difficult, and we are obliged to rely a great deal upon the History of the case and the feeding.

The Radiagraph is of use today in making diagnoses. It shows a marked thickening and hammered out appearance of the epiphiseal line.

We are quite often called upon to make the diagnosis between Scurvey and Rheumatism, which is generally easy, as Scurvy is most frequently found in children under two years of age: and Rheumatism is about as scarce as hen's teeth under that age.

In older children in case of Rheumatism there is generally inflammation and fever, together with pain at all times and a Rheumatic history. In rheumatism the joints are apt to be involved.

We are quite frequently called upon to diagnose Scurvy from Traumatism, which is generally done by the history of the case, together with location of the swelling; absence of temperature, with some of the other symptoms, such as swollen gums: ecchymoses of the skin; blood in the urine, and pseudo-paralysis.

After this, in a screaming or frightened child it is difficult to be sure about the presence or absence of the tenderness, which if present may be due to fracture or acute necrosis, or generally, the absence of fever, and lack of swelling and heat over the part affected will help us out.

Next, we may be called upon to distinguish Scurvy from acute Poliomyelitis.

Sometimes it is somewhat hard to distinguish between the pseudo-paralysis and actual paralysis. I remember sending a case to the Polyclinic which I diagnosed poliomyelitis, and which Dr. Kerley diagnosed as scurvy. On going over the case more carefully, it was easy enough to see he was right.

The main point of diagnosis is sudden onset of the Poliomyelitis with little or no pain, possibly a little during the first two days: no tenderness on pressure: and no other signs of scurvy.

Because of the fact that Scurvy and rickets are caused by disorders of metabolism, due to dietetic errors, they are easily confounded; and as is proven by investigation of the Am. Ped. Soc., scurvy and rickets were associated together in 152 cases out of 379.

The main differences are:—Tendency to hemorrhages, and prompt relief from use of fresh food and orange juice in scurvy, which is not the case in rickets.

In rickets, the rosary, the enlarged epiphyses, no pain, the square head, the enlarged fontanelles.

The next we differentiate between scurvy and diseases of the hip and the spine, sometimes confused doubtless because of the immobility which we have in scurvy, due to intense pain on motion, so that the child contracts muscle to try to overcome pain.

To distinguish from T. B. in children history, diet, mode of life; condition of lungs; condition of glands of the neck, chest or abdomen, no cough, and the presence of signs of scurvy.

We must be able to diagnose scurvy from Sarcoma, Ostitis, Peri-ostitis; Osteo-myelitis. To help in this we will have location and shape of swelling, discoloration; also fever, which is not seen in Scurvy. Mistakes in regard to these last named diseases have been made by prominent surgeons. Epiphysitis of hereditary Syphilis which is apt to appear before the fifth month with other evidences of Syphilis, together with the effect of Anti-scorbutic treatment, will generally help us out. Haemophilia can be differentiated by the history of heredity and previous bleeding and the close examination of the joints.

In cases of intercranial hemorrhages, we should be able to make the diagnosis by the convulsions together with other scurvy symptoms.

Prognosis:—The prognosis is generally favorable if correct diagnosis is made, and more so if the diagnosis is made early in the disease: followed by an antiscorbutic treatment, which almost never fails to bring about results which are a credit to the physician and gratifying to the patient.

Dr. Still, of London, says he has seen the pain and tenderness disappear in 48 hours. And even goes so far as to say if there is not some improvement in four days, the diagnosis of scurvy should be questioned.

The report of the American Pediatric Society says that over 300 cases were over three weeks standing before treatment was started. Within three days there was improvement in 40 per cent.; and more than two-thirds were well in three weeks. This shows the need for an early diagnosis.

This disease being a chronic one. and having no tendency to spontaneous recovery, it becomes necessary to make a correct diagnosis and instigate proper treatment. Fatal cases are generally due to long standing, with some complications such as mal-nutrition, marasmus, intestinal catarrh, bronchial-pneumonia with a weakened heart. Dr. Still also saw five fatal cases of diarrhoea and exhaustion, and one case with nephritis. The development of rickets with scurvy is apt to increase the mortality. The complication of syphilis or tuberculosis in the blood is bad. In a few cases death may be due to insufficient knowledge of the case. Others may be due to cerebral hemorrhage; also to profound anemia.

Epiphyseal separations are most always found in fatal cases.

Prevention and treatment:—As a preventive, all children should be fed on fresh food of the right kind and quantity. A child past four or five months may be given a little orange juice-say, 1-2 teaspoonful twice a day. It is better to delay giving beef juice and mashed potato until after the 8th or 10th month. Children should have plenty of fresh air, sunlight and baths.

The first indication generally is to change the food, whether on the breast, patent foods, condensed milk, or whatever is used. But I do not believe it is always necessary to change the food. I had a case sometime ago which was being fed on Kerley's formula, which is rather low in fat and high in casein, in which scurvy developed. I looked over the formula and could not see where I could better it, so concluded to give orange juice and make no change in feeding. The child was much improved in pain and tenderness in three days' time,— entirely well in less than two weeks. The same formula was continued according to age with the addition of orange juice, with no recurrence. However, my advice would be to change food in most cases.

It is plain that cow's milk is not a very strong anti-scorbutic. We get cases fed on milk mixed with cooked foods of all descriptions and as soon as milk is heated, even pasteurized, it begins to lose its anti-scorbutic properties.

If the child is eight months or past, it is good to give a little raw meat juice. This must be raw, as it has been tested and found that cooked meat juice, or Valentine's and other cooked meat juice preparations are neither a preventive or curative. Beef juice as well as milk being weak in anti-scorbutic properties has to be given in quite good quantities. And as orange juice seems to be one of the strongest anti-scorbutics that we have, and advised by the best authrities we have to-day, such as Holt, Kerley, Still, Griffiths, etc, my belief and experience is that it is the best and most reliable treatment. Some doctors have tried other juices, such as grape juice, lemon juice and even vegetable juices, but found orange juice to be the best. The oranges should be fresh and sweet, and should be given a teaspoonful every two hours, making about one oz. in 24 hours Less orange juice should be given for a preventive than for curative. A recurrence of symptoms may be seen if the orange juice is stopped to soon.

In my estimation the next best remedy is mashed potato, boiled or steamed with coat on, the layers next to the skin scraped off and beaten up with milk 2 teaspoonfuls of potato to 1 oz. of milk, and given one to two teaspoonfuls 3 or 4 times a day.

In two cases where I tried the potato with no other treatment, the children improved as rapidly as with the orange juice. A case which I saw at St. Mary's, and put on potato treatment, I sent over to the Polyclinic three days later. When Dr. Kerley first looked at it, he wanted to know where the scurvy was.

The only marks left to prove my case, was purple gums. The tenderness in the limbs had already disappeared.

The main drawback to the potato treatment is tendency for it to produce diarrhea, which is, as Glisson said years ago, a very serious complication.

The report of the Amer. Ped. Soc was that physicians agreed that drugs were of no value in treating a simple case of scurvy. Of course, with complications, we are liable to need some drugs. In breast-fed infants, it has been found to benefit the child by having the mother eat three (3) oranges a day, but they may be given to the baby direct in small quantities. The mothers milk should be tested, to see how fats, carbo-hydrates and proteids are running. In my opinion it should be tested as to alkaline salts. Next, we must not forget that the child is in a great deal of pain; it must have rest. Its legs may be bound up in cotton and immobilized by splints, both to relieve pain and tenderness, and in cases of epiphyseal separation. See that the child is given plenty of fresh air and water to drink. Complications should betreated as they arise. During convalescence, especially in the more severe cases we should look after the secondary anemia, malnutrition and exhaustion. Iron, Arsenic, Cod liver oil and Maltine and other tonics are indicated.

The following are some cases which have come under my observation:

Case No. 1.—White; 9 months old; sick two weeks; swelling in both legs above knees; knees flexed and everted; child lying as though legs were paralysed, and crying if touched; no temperature; gums purple, swollen spongy and bleeding; child also had cough; slight rash on chest; and had been fed on Nestle's Food since 1-2 month old. Weighed 8 pounds when born; has no teeth; could not walk or talk; some indigestion and diarrhea. Father had rheumatism, and aunt tuberculosis. Was given orange juice and some cough medicine. Two months after treatment child weighed 13 lbs. and had two teeth, gums normal and all symptoms of scurvy gone.

I wish to go over four cases breast-fed, from 4 to 8 months of age which I saw within the past nine months,—one at the Polyclinic; 2 at St. Mary's and one in private practice,—all presenting the swelling and tenderness of one or both legs, and all cried when handled. Two were thought by parents to have fallen; one thought to have hip disease; and one thought to be rickets.

Only two had teeth; gum symptoms in three cases; no temperature in any of them; two had lost some weight and were anemic; one had vomiting; one diarrhea; two were constipated.

The cause must have been the mother's milk which I examined in 2 cases myself, but could find nothing wrong in either case. Two of the mothers were thin and anemic; but none had scurvy. I mention this as it has been stated that the baby might get it from the mother.

The Toxic or Germ Theory could hardly apply to these cases, as the babies were nursing from mothers free from the disease. I believe that they were producing milk containing too much alkalin salts. Three of these cases were cured with a little orange juice; the fourth was cured by orange juice in addition to being weaned.

I have seen six other cases in the past two years, aged 4 months to 3 years; one fed on Nestle's Food; one on Mellin's Food; one on Horlick's malted milk; one n condensed milk; one fed on breast and table food together—all recovering under the treatment of fresh food, orange juice, tw on orange juice, and two on mashed potato.

Summary

First—Most cases have symptoms of indigestion of an alkaline nature.

Second—In proof of alkalinity we have the fact that acid neutralizes akali: and that acid cures scurvy and causes rheumatism. Acid added to boiled milk or cooked foods which cause scurvy makes them more digestible and prevents scurvy.

Third—Change of food does not cure the case without neutralizing with the acid.

Fourth—If it were anything else than an alkaline condition, I cannot see how in a breast-fed case, that feeding an acid to the mother is going to change the milk so as to cure the baby, and yet the alkali may not be in the blood of the patient: but we will find an alkaline condition of the intestinal canal. As in Stomutitis we have an acid condition. In scurvy an alkaline condition of the canal.

Fifth—That it is possible for mothers' milk to so change as to produce an alkaline condition in a child's stomach.

Sixth—Alkaline foods will not cure the scurvy.

Seventh—Against the Toxic or Germ theory: 1st We have cooking of foods a causative instead of a curative. 2nd. Breast-fed children may have scurvy. 3rd. Cooking of potatoes and greens does not destroy the anti-scorbutic properties.

Eighth—Scurvy is most common during the first and second years while the baby is fed on cooked foods which are alkaline. Rheumatism is more common at a later age when the child gets more acid or acid-producers, such as sugars and red meats.

Ninth—The fact that by neutralizing with acid the case improves is used as a diagnostic point, is another proof.

Tenth—Cooking of foods a cause only in those that change to alkali: but those that change to acid become an anti-scorbutic: as is the case of potatoes and greens.

Eleventh—Lastly, it is very important to make an early diagnosis.

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THE PROTECTION OF INFANTS AGAINST TUBERCULAR INFECTION*

BY CLIVE RIVIERE, M.D., F.R.C.P.

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The subject of our discussion, "The Protection of Infants against Tubercular Infection," seems to me like a mansion with many doorways—it is highly embarrassing to decide where to enter it, and it seems also somewhat uncertain at the outset where we shall emerge. It is far from my desire to play the part of cicerone, but it will be my duty to lead you in, and invite you to view certain of the contents when we have got inside. Whether you will see matters as I see them, and whether I can persuade any of you to come out again with me through the doorway I have marked down for myself, can only appear at the conclusion of this meeting.

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*Read before the National Conference on Infant Mortality, Liverpool, July 2-3, 1914.

Perhaps we had better enter the subject with a reminder of the ubiquity of the tubercle bacillus among crowded communities.

Post-mortem and tuberculin tests alike show that but few living in towns remain uninfected with the tubercle bacillus after the age of 14 years, and the proportion in country districts is not very much lower. Obviously infection cannot be avoided under modern conditions of life, and it might be asked why we should discuss here the protection of infants against tubercular infection which is sooner or later inevitable.

The answer to this must be that it makes all the difference in the world when and how the infection is first met—whether the organism is of the human or bovine variety, the pathway of infection, and whether the dosage—as regards virulence and quantity—is large or small. Here we are at once supplied with a series of important problems, none of which we can afford to neglect in a discussion such as this, and so I propose to take these points one by one and consider their bearing on our subject

Incidence of Fatal Tuberculosis in Infancy

At the outset let us convince ourselves of the dangers of tuberculosis in infancy and this is but too readily done. If we study the Registrar-General's reports we find that the incidence of tuberculosis falls heaviest on children below the age of 5 years, that, indeed there are many more deaths per million living in this five years than in any other age period of life. This is well born out by some investigations of Hamburgher's in Vienna, whereby he shows how infection and mortality run neck and neck during the first few months of life, and how the mortality rapidly drops with age, though still high during the first three years of life, and how from four to five years onwards the extremely low mortality found during school years is apparent.

The same fact is exemplified by post-mortem experience.

It is but rarely that processes of repair are found in tuberculous areas during the first year or two of life—disease is either active or has been the actual cause of death. We must then look upon infancy, and especially early infancy, as a time of peculiar susceptibility to tuberculosis.

The Age Factor

How much of this susceptibility, it will be asked, is attributable to the influence of age, and this is a more difficult matter to decide than might appear at first sight. Practical experience of manifest tuberculous disease certainly teaches us that the younger the child the more serious the outlook, and this is upheld by such statistical inquiries into the relationship of morbidity and mortality as those of Hamburger already referred to.

The Virgin Soil Factor

Even more important than age, however, in determining the peculiar susceptibility to tuberculosis in childhood is the fact that we are dealing with a primary as opposed to a superinfection.

A dose of tubercle bacilli fatal to a healthy animal will cause no serious effect in an animal already rendered tuberculous. Romer was able by the use of tubercle bacilli of very low virulence to immunize animals so highly susceptible as guinea-pigs so that they became entirely resistant of ordinary reinfection. If massive doses of bacilli were now given a chronic tuberculosis ensued, while control animals went under at once with acute miliary tuberculosis. Substitute the adult human for the immunized guinea-pig, and the tubercle-free human child for the control, and we have at once the conditions existing among civilized communities of men.

Further proof of the importance of primary infection, as opposed to mere age, in explaining the susceptibility of childhood, is to be found in the well-known susceptibility of the natives of tubercle-free districts to tuberculosis. In such districts tuberculosis assumes the acute forms commonly found here among infants only, and the disease is correspondingly fatal. We must, then, take into account two factors in the high mortality of infancy: the susceptibility of age and the fact that the seed falls on virgin soil.

Human or Bovine

We may now turn to a matter of great importance to the problem of tuberculosis prevention. It has been found that two varieties of the tubercle bacillus exist, the human type proper to man, and the bovine type proper to cattle, but undoubtedly able to infect humans. The former is certainly the most virulent to man, its own proper host, and is responsible for all forms of lung disease and most of the fatal tuberculosis of humans. The bovine bacillus is very virulent to cattle but of low virulence to man, its activities being confined to the years of childhood, and mostly giving rise to mild and recoverable forms of disease in the abdominal viscera, or in the neck glands. Fatal generalized tuberculosis may occur, but is rare. Attempts to inoculate adults with the bovine tubercle bacillus have hitherto failed.

It may be said, then, that the human type of tubercle bacillus is that to be feared by man, the bovine bacillus being of but mild virulence to humans and only leading to disease, probably, when given in massive dosage and to young infants. Even under these circumstances the risks seem small, as were shown by some investigations by Weber and by Ungermann into the health of families fed from cows with manifestly tuberculous udders. But few cases of tuberculosis, and these mild, occurred among the children of these households.

Pathway of Infection

Closely associated with, indeed insepararable from the consideration of human or bovine infection, is that of the pathway by which the germ enters; for bovine infection is of necessity alimentary, whereas the human type of bacillus is air-borne as dust or droplets, and may enter either the respiratory or alimentary tracts, or both. The importance of this is evidenced by the fact, well vouched for, that many hundred thousand times the dose is required for alimentary infection as suffices to cause disease through the respiratory apparatus.

Dosage

We come now to the question of dosage with tubercle bacilli and its relationship to disease. It is obvious that but little can be known directly on this point for humans, and that virulence and quantity cannot be considered separately. The ease and frequency with which people are infected among crowded communities is probably much greater than is commonly believed. Metchnikoff found that practically all the tubercle-free Kalmucks coming into Astrachan were infected within one year, and even people living in country districts show a very considerable percentage of reactions to the tuberculin tests. Adults living in large towns and cities are certainly reinfected at comparatively short intervals, a process which in all probability serves to keep their acquired immunity at a high level. The question of dosage is, as we have already seen from Romer's guinea-pigs, intimately bound up with the question of primary or re-infection. A dose which is without effect on an immunized adult may be fatal to a tubercle-free child. The only natural experiment in massive dosage we can cite, qua human infants, is that exhibited by the inmates of a tuberculous household. The greater incidence of infection in such households is well brought out in some figures collected by Cohn. He found 66 per cent. of children living under these conditions reacted to v. Pirquet test at 2 to 3 years of life. and 100 per cent. were infected by the age of 14 years. The greater incidence of disease in these households were shown by Floyd and Bowditch. who found a large incidence of lung disease, hence of a serious form of tuberculosis, among the children of tuberculosis homes. The wonderful and striking thing is rather the fact that so many may be infected, and probably reinfected constantly, among such tuberculous families and yet avoid manifest tuberculous disease. It is very probable that in many of these cases a latent focus remains in the chest glands, to become active years afterwards as phthisis when some depressing factor has lowered resistance too far. This is doubtless the explanation of most cases of so-called "family tendency" to consumption, the tendency depending rather on a severe childhood infection and the presence of smouldering disease than on any true predisposition.

Recapitulation

At this stage it may be well to recapitulate some of our premises so that we can draw a few preliminary conclusions. We have found—

(1) That infection with the tubercle bacillus is inevitable for those living in crowded communities.

(2) That a mild infection is protective against further disease, or at worst against acute and rapidly fatal forms of disease.

(3) That a primary infection is always dangerous, but that the younger the infant the more massive the infection, and the more virulent the type of organism, especially if airborne, the more serious is the outlook.

Postponement of Infection

One conclusion to which these points lead us is that our children should be protected from infection till the latest possible moment. It has already been laid down for adults that a year of town life will inevitably infect, and that reinfection probably occurrs at frequent intervals; but the more restricted and protected lives of infants make early infection less inevitable, and it is probable that with care its date can be considerably postponed. This is well shown by the results of tuberculin tests, such as those of Hamburger and Monti for Vienna, where, with the most delicate tests among children of the poorer class, none (among twenty-three) reacted in the first year of life, only 9 per cent. in the second, and 20 per cent. in the third year. Schlossman found lower percentages among his private cases, showing that better conditions of environment reduced the risks still further.

Tubercle Vaccination

But however well chosen the conditions of life, we know that the moment of primary infection must come, and the question has to be considered whether we shall risk infection by the dangerous human organism and through the more susceptible respiratory channel, or whether we shall take measures to voluntarily substitute alimentary infection with the comparatively innocuous bovine tubercle bacillus.

Massive dosage, such as may occur from a single cow or small herd infected with tuberculosis, is to be carefully avoided, though even here the investigations of Weber and Ungermann already quoted show that the dangers are not very great. Dilution of the organisms in a well-mixed milk supply, such as many large dairy companies can provide, reduces the risk of gross infection to a minimum, and the matter may be still further elaborated by feeding only small quantities of unboiled milk at first, and postponing its administration till the more susceptible early months are past. I would contend that complete extermination of bovine tuberculosis is not to be wished for so long as the human tubercle bacillus is rife among us; and fortunately this is but little likely of accomplishment. Our goal should be a clean milk supply, and adequate inspection of small byres and of single cows; through these measures danger of massive bovine infection may be eliminated, and the use of raw milk be more safely and confidently recommended.

Tuberculous Households

So much for the question of tubercle infection in general and apart from conditions of special risk. It is necessary to consider separately the conditions of children living in phthisical households where the danger of massive dosage with tubercle bacilli of human type comes into play. The figures of Cohn already quoted show that some 66 per cent. are infected by the age of 2 to 3 years, and it is interesting that the percentage has only risen to 80 per cent. at the age of 10 to 11 years. There is no doubt that the youngest members of the family run the greatest risk in these households, even apart from their special susceptibility. Not only are they fondled, nursed, and hence in more intimate contact with adult members of the household, but their proximity to the floor and its dust places them in particular danger. Roepke, exposing sterile slides in a room where the washing from a tuberculous sanitarium was sorted, found that tubercle bacilli could not be demonstrated at a height of 1 to 1 1-2 metres above the ground, but virulent ones were collected from below this level, and the nearer the ground the greater the results to animal experiment. Obviously this is a point of particular importance in considering the risks to young children in a phthisical household. For such children the trap seems baited by nature with almost fiendish ingenuity. Not only are they at the most susceptible age, and unprotected by former acquaintance with the tubercle bacillus; not only is the bacillus air-borne and of the deadly human variety; not only does their dependent position bring them into closer contact with adults, and fix them more constantly to their dangerous surroundings, but in addition their very size, their helplessness, their mode of progression, hold them always in the zone of danger close to the dust of the floor.

There is nothing more painful in these days than the tendency to treat the consumptive as a pariah. That his danger to adults already infected and immune must be small indeed is testified to by the well-known freedom of the medical and nursing staffs of tuberculous institutions; that this danger can be reduced to a minimum by a careful personal regime is admitted by most. As Cornet puts it: "The consumptive, if scrupulously clean, is not a source of danger even to his immediate environment;" or Koch: "A consumptive who coughs out tubercle bacilli is not necessarily a source of infection on that account so long as he takes care that the sputum is properly removed and rendered innocuous."

All this must be admitted so far as concerns adults and older children, but I would put it before you as a point for discussion whether the same holds true for the susceptible infant. I may perhaps remark that in my own opinion it does not, that no amount of care can eliminate droplet infection during cough, and there can be no real protection for young infants in near relation to a case of active phthisis. I would put it to you for your consideration whether such infants should not be removed as soon as possible to safer surroundings.

Conclusions

And now, having stirred up many controversial points, any of which may form the basis of your attack, I would put forward for your particular notice two propositions already belaboured somewhat in this short paper.

The first is the question of whether the bovine bacillus is not at the present time doing useful work in protecting the community against the more virulent human variety of tubercle bacillus, the cause of phthisis and of most fatal forms of tuberculosis. In this connection I would point out to you that in Edinburgh where bovine infection is very common the phthisis mortality is only one-third that of Vienna, where bovine disease is very rare. Indeed, a similar high incidence of bovine infection and low phthisis mortality may be claimed for Great Britain as a whole in comparison with other civilized countries in Europe. Those who look askance at raw cow's milk, qua tuberculosis, seem to me to ignore the Charybdis of infection with the human tubercle bacillus into which their victims must inevitably drift, for there is no escaping one or the other among civilized communities, and for a first infection the bovine bacillus is incomparably the least dangerous. I would, then, put it to you whether we should not take measures to secure a mild bovine infection instead of leaving our children to risk a first encounter with the infinitely more virulent human organism.

My second proposition has already been stated, and is this: That no amount of precaution will protect young infants in tuberculosis households, and that they should be removed as soon as possible from such dangerous surroundings.

THE TREATMENT OF PERTUSSIS*

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Ocassionally one may become profitably and interestingly absorbed in the study of an ancient and apparently uninviting subject. I have been especially interested in the recent epidemic of pertussis in Louisville, and observations during this epidemic furnish my only excuse for offering you this brief paper.

For many years—because the disease occurred in epidemics and reasoning from analogy—pertussis was considered as an infectious malady; but not until 1906, when Bordet and Gengou discovered, isolated and minutely described the small cocco-bacillus which is now known to be the primary and essential etiological factor, did we possess any positive information concerning the specific origin of the affection.

While the habitat and characteristics of the Bordet-Genou bacillus are now well understood, the following brief reference thereto may be permissible: "It is a very small, ovoid bacterium, which keeps its form and appearance in the culture as well as in the sputum, which is hardly colored (especially in the central parts) by methylene blue or toluidine, which does not form spores and is killed by a temperature of 131 F., which is found in great numbers in the sputum during early paroxysms of the cough, but as the disease progresses it becomes more rare." Many observers in addition to Bordet and Genou have succeeded in isolating the bacilli, and have shown that "the essential lesion of pertussis consists in the presence of masses of minute bacilli between the cilia of the epithelial cells lining the trachea and bronchi." For example, in 81 cases examined, Inaba found the bacilli 78 times. In 88 per cent. of these bacillus was grown in pure culture. Similar observations have been recorded by numerous other investigators during the last few years. It is claimed that the action of the bacilli is chiefly mechanical, i. e., by causing adhesions they interfere with normal ciliary movement, and continuous irritation occurs with production of the characteristic symptoms.

*Read before the Society of Physicians and Surgeons, of Louisville, Kentucky, May 21, 1914.

It may be interesting to also note that the disease has been experimentally transmitted from the genus homo to dogs, cats, rabbits and monkeys; likewise from one animal to another, not only by the process of inoculation but also through mediate contact, all showing the typical tracheal and bronchial lesions. And since the bacilli are admittedly more numerous in the early stages, it naturally follows that the disease is more readily communicable during this early period of its history than later when the bacilli are gradually disappearing.

From the standpoint of both prophylaxis and treatment, the following dicta appear sufficiently important to warrant especialy emphasis:

(1) That the organism is invariably present in the bronchial and tracheal mucus during the first two weeks of the disease, but isolation later may be difficult or impossible.

(2) That this observation coincides with the prevailing general impression that the disease is most infectious during the first two or three weeks.

(3) That the disease appears much milder during the months when the greatest amount of out door life may be obtained by the patient.

The misuse or misapplication of drugs in the treatment of pertussis has heretofore been the frequent cause of distressing symptoms which were erroneously attributed to the disease. For example, (a) The depression resulting from the administration of the various coal tar preparations; (b) the tinnitus aurium, gastric disturbance, rashes, etc., from quinine; (c) the drowsiness from codeine; (d) the delirium, dilated pupil, reddened skin, etc., from atropine.

During the recent epidemic of pertussis in Louisville, I have given my patients no medicine, excepting laxatives when required to secure proper elimination, and the remedies indicated to control a coincidental disorder which developed in one case, i. e., measles. In that case I regarded measles as a concomitant or accompanying disease rather than a complication of the pertussis.

I have abandoned all drugs in the treatment of pertussis, because there are none which will positively limit the course of the disease, although there are a considerable number which are recommended and commonly prescribed to diminish the frequency and severity of the paroxysms. To be effiective, however, such remedies must be pushed to their full physiological limit, and even then it is oftentimes questionable as to just how much good is accomplished.

The vaccines prepared according to the method suggested by Bordet and Gengou have been productive of the best results, and I now employ them exclusively in the treatment of pertussis. In addition, of course, it is necessary that proper attention be given to the diet of the patient, abundant exercise in the fresh air is desirable, and also the administration of laxatives when required.

The desirability of the fresh air treatment cannot be too strongly emphasized. The little patient should be kept out of doors as much as possible when the weather will permit. If it be too cold or rainy, and confinement to the house becomes necessary, the windows of the room should be kept open day and night; or, if this be impracticable, the patient should be frequently moved from one room to another, each being thoroughly aired in the interim, thus insuring an abundance of fresh air at all times.

I have also long since discontinued the inhalation of the vapors of cresoline, benzoin, and other similar preparations hitherto extensively employed in the treatment of pertussis, believing that much greater benefit may be expected to occur from the continuous breathing of fresh air than from the occasional inhalation of vapors of any kind.

The diet of the patient should be carefully regulated, but a sufficient quantity of easily digested and nourishing food must be permitted at regular intervals. It is obvious that the diet should not be restricted beyond certain reasonable limits, as it is of the utmost importance that the strength and vitality of the patient be conserved. If vomiting occurs during a violent paroxysm shortly after eating, the child should be again fed promptly, thus replacing the food regurgitated.

While the child is being kept out of doors in the fresh air in accordance with the foregoing suggestion, of course, the clothing should be ample to prevent undue chilling of the body surface; on the other hand, care must be exercised that the clothing be insufficient to induce any considerable prespiration, otherwise aggravation of the disease and the supervention of perhaps dangerous complications may be favored. It is recommended that the patient wear only a moderate amount of clothing, normal temperature being maintained as nearly as possible by requisite exercise.

If the paroxysms become inordinately violent at any time during the course of the disease, the danger of hernia may oftentimes be obviated and abdominal pain minimized by the wearing of a suitable binder. Such an abdominal bandage cannot possibly be productive of harm, and in many instances much good may be accomplished.

Under the older methods of treatment, by the exhibition of large doses of the various drugs, the nervous phenomena accompanying pertussis were sometimes quite alarming; but since the adoption of the vaccine treatment nervous symptoms have occurred in only a small percentage of cases. This at least has been the experience and observation of the writer. The development of mild manifestations of nerve irritation requires no especial treatment, but when the symptoms become more severe and annoying the appropriate treatment is hydrotherapy, either baths or packs whichever may be most conveniently applied. However, as already indicated, nervous phenomena have been infrequently observed in my experience since adoption of the vaccine treatment.

It is important that the child be kept comfortable at all times, and not be permitted to cry if this can be avoided, because oftentimes paroxysms or coughing are induced by annoyances of any kind. For this reason I have discontinued the employment of all embrocations, such as rubbing the chest with preparations containing the volatile oils, etc., the evaporation of which was presumed to have a soothing effect upon the mucous membranes.

Where prophylactic treatment is possible, it should be instituted immediately upon appearance of the first symptoms of cough, especially if exposure to contagion be suspected. In families where one or more of the children already have pertussis, by the prompt institution of prophylactic treatment further spread of the disease may be prevented in the vast majority of instances. For this purpose I have been in the habit of using plain pertussis vaccine, administering about 25,000,000 bacteria, repeating the dose three or four days later.

In this connection an interesting observation of Sill on the prophylactic use of vaccine seems pertinent. Immunizing doses of vaccine were administered to two children in a family where another child was then being treated for pertussis. One child of five was given four injections, another of three received nine injections, of 20,000,000 bacteria each, during the period of a month. These children had never had pertussis. and although constantly exposed neither developed the disease. Sill suggests, therefore, that immunity may be secured by the employment of vaccine, which is in exact accord with my own experience.

When the patient is not seen until after the disease has already developed, of course, the treatment should be instituted as promptly as possible, since the earlier vaccine is administered in developing pertussis the better in the interest of the patient. Under such circumstances I have for some time been using the combined pertussis vaccine, which is composed of the following:

Bacillis of pertussis, 50,000,000 bacteria.
Staphylococcus pyogenes aureus, 20,000,000 bacteria.
Streptococcus pyogenes, 10,000,000 bacteria.
Micrococcus catarrhalis, 20,000,000 bacteria.
Bacillus influenzae, 20,000,000 bacteria.

This pertussis vaccine (combined) is distributed by the manufacturers in 1 c.c. bulbs each representing the foregoing formula. It should be administered in graduated doses two to four days apart. In most instances three or four doses will be sufficient. In some cases all symptoms disappear after the second dose. in others the cough may persist for several weeks, but the paroxysms are usually markedly reduced in number and severity. The average duration of the disease may be approximately stated as about twenty-five days. While in my experience no reaction has occurred even where larger doses were administered than advocated by other observers, the first injection is usually 1-2 c.c., or just one-half the quantity embraced in the formula mentioned. With the exercise of proper care in the administration, there should be no local nor constitutional reaction following the injection, such as elevation of temperature, rashes, rheumatoid pains, vomiting, malaise, etc. Of 104 cases treated with vaccine by Nicolle and Connor a prompt cure resulted in 35 per cent., marked improvement occurred in 38 per cent., and in 26 per cent. no benefit was noted. Many of their patients were cured by only two injections. Klimenke reports good results in 35 cases, and similar observations have been recorded by Scott, Wilson, Bamberger, Sill and a host of others.

In the curative treatment the mixed (or combined) vaccine has given the best results. I believe this is due to the different organisms antagonizing the mixed infection which must necessarily be present after liberation of the pertussis bacteria, etc., in connection with the organisms which are constantly present in the bronchial and tracheal mucous membranes during the early stages of the disease.

The only systematic disturbance which has occurred, and which may be reasonably attributed to the administrattion of the vaccine, has been that occasionally for about twelve hours after the injection the patient seemed a little restless and nervous. It has also been noted in quite a number of cases that the child complained of rather severe pain at the site of the injection, which continued several hours. There has been in no case the slightest evidence of infection, and all necessary aseptic precautions were observed in making the injections. In no case has there been formation of abscess at the site of injection.

Based upon my personal experience in the employment of vaccine in the treatment of pertussis, the following conclusions seem amply warranted:

(1) That results show if administered as a prophylactic agent pertussis vaccine prevents development of the disease, provided the injections are given sufficiently early.

(2) That administered early as a curative agent the combined vaccine not only lessens the severity of the paroxysms but shortens their duration.

(3) That even late in the disease the combined vaccine treatment is worthy of trial, since without this treatment the disease may be much more serious.

(4) That complications, which have been so frequently observed under the older methods of treatment, do not occur when the combined vaccine method is employed.

In no cose treated with the combined vaccine during the present epidemic in Louisville have any complications arisen, excepting as stated in one case which I considered a coincidental malady rather than a complication, viz., measles.

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Discussion

Dr. W. H. Coleman: Before the discussion is formally opened, I would like for Dr. Myers to tell us the number of pertussis which he has treated during the present epidemic according to the method described.

Dr. S. J. Meyers: Modesty forbade my stating the number of cases in the paper, because I have treated a great many cases of pertussis during the last three years; but it is only fair to state that in some families there were three or four cases. I have also given a large number of prophylactic injections.

Dr. E. Witherspoon: I wish to thank Dr. Meyers for the privilege of hearing his most excellent paper. My views are entirely in accord with the conclusions he has reached. Through my connection with the city health office (Louisville) I have had opportunity of obtaining the views of a large number of physicians who have used pertussis vaccine. I long since reached the conclusion that it is absolutely the only remedy that is worth while in the treatment of pertussis, and that other medicines are practically without value.

Dr. J. B. Richardson, Jr.: I do not recall having treated a single case of pertussis during the last six months. There is a method which was not mentioned by Dr. Meyers that will stop the paroxysms of coughing in at least ninety per cent. of the cases, viz., lifting the lower jaw of the patient as is done to bring the base of the tongue forward during the administration of an anesthetic.

I would like to ask the assayist to tell us something more about the modus operandi of the fresh air treatment of pertussis. I remember many years ago it was the custom to have children suffering with pertussis make frequent visits to the city gas plant. Whether benefit accrued from the fresh air during these trips to and from the gas plant, or whether there was some effect from inhalation of the gas I do not know, and hope Dr. Meyers will explain this feature in closing the discussion.

Dr. Sam P. Myer: I have recently used pertussis mixed vaccine, and also the older methods of treatment, in several cases. The only advantage of the vaccine treatment that I have observed is that it lessens the severity of the paroxysms. I do not believe it cures the disease, at least that has been my experience.

I agree in everything else the essayest has said concerning the treatment, especially the use of a suitable abdominal binder. Good results have frequently followed this method of treatment.

Dr. L. P. Spears: I have used plain pertussis vaccine in perhaps "180 less families" than has Dr. Meyers; but my results from the treatment have been decidedly less favorable than shown by his report. After hearing the remarkable results obtained by the essayist from the mixed vaccine I shall be glad to give that method a trial.

Dr. W. H. Coleman: I wish Dr. Meyers would give us an idea as to the percentage of cases benefitted, the percentage in which no benefit accrued, and also the kind of vaccine he employed. It has been my practice to administer vaccine every two days during the treatment of pertussis.

I have recently used vaccine in about forty cases of pertussis, and have kept an accurate record of the length of time the patients were under treatment, when the vaccine was administered, how frequently the paroxysms of coughing occurred, and the results following each dose. These data show that approximately fifty per cent. were practically cured within a few days, and the remainder were materially benefitted; that is, the symptoms were markedly ameliorated, and the course of the disease shortened. I watched the patients carefully, and am able to make this absolutely positive statement. Moreover, of all the cases of pertussis previously treated by the older methods, the best I was ever able to do was to produce temporary relief of the symptoms by the orthodox treatment recommended by the best authorities.

I have kept an accurate record of the histories of the cases treated with vaccine, and a brief summary of a few of them may be interesting: In one family there were four severe cases, the children had been coughing for three weeks, the paroxysms occurring every hour day and night. After the second dose of vaccine two of these children ceased "whooping" and were practically cured. The other two were greatly benefitted, the paroxysms being less severe, shorter in duration, and occurring with less frequency.

One little girl had paroxysms of coughing every hour both day and night and became so weak that she could not stand unassisted after three weeks; her conjunctivæ were markedly congested, and hemorrhage occurred from her eyes, nose and mouth during the paroxysms. The "whooping" ceased after the third injection of vaccine, and although she continued to cough for a week or two, she was practically cured after the third dose.

More recently I have used vaccine in five cases. Two of the patients, aged seven and nine years, had been coughing for about three weeks. The first dose of vaccine had no effect, I gave 100,000,000 bacteria plain; likewise the second dose given two days later resulted in practically no benefit. After the third dose the paroxysms ceased, and there has been no recurrence.

In only four or five instances have I administered the fourth dose of vaccine, and in these no effect was noted after the third dose. I believe vaccine is the most valuable treatment that has ever been suggested for pertussis.

Dr. J. M. Barnett: My experience with pertussis vaccine has been limited. I believe it ought to be given in small doses, and we should pay greater attention to the weight of the child being treated, gauging the dose of vacine by the child's weight.

Another method of treatment I have tried is "tapping" the region of the fifth cervical nerve 200 to 300 times per minute with a suitable vibrator. This causes anesthesia of the nerve, and in some cases will arrest the paroxysms.

Dr. A. C. L. Percefull: I have had little personal experience with pertussis vaccine, but from all I can gather through reading and conversation with physicians who have had considerable experience with the method, I think vaccine is the treatment par excellence in pertussis.

I am glad to hear Dr. Meyers say that he has discontinued all the older methods of treatment. I believe the tendency has therefore been to over-treat children with pertussis instead of giving them insufficient treatment. The mother, being very solicitous and anxious about the welfare of the child, oftentimes keeps the little patient worried and nervous by over attention.

Dr. A. J. Bizot: If I had written it myself, I could not have changed a single word in Dr. Meyers' paper. I know of nothing which has accomplished so much good in pertussis as the vaccine treatment. Heretofore we have prescribed various drugs, inhalations, etc., without favorably influencing the disease, whereas vaccine has produced benefit in every case and in the majority a prompt cure has been effected by this method of treatment.

As to vomiting in relation to the nervous condition of the patient: In certain cases which were closely observed, I found that vomiting seemed to act as an anti-spasmodic, and resulted in prompt subsidence of the nervous phenomena. Vomiting occurs much more readily in some cases than in others, and if the child is very nervous and vomiting does not ensue, I have been in the habit of prescribing quarter grain doses of apomorphine. In several instances this has had the happy effect of promptly producing vomiting, thus reducing the nervous condition of the child.

We should not make the mistake of regarding pertussis as a mild disease in young children. In infants under eight months pertussis is a serious affection, and our prognosis should always be guarded. Moreover, it must be remembered that pertussis is a disease which does not affect children only. I now have under observation a lady of seventy-four years, and a gentleman of thirty-seven, with pertussis. There is nothing more distressing than to see this old lady in a violent paroxysm of coughing. I have tried vaccine, apomorphine, bromoform, belladonna, the fresh air treatment, and all other methods which are supposed to be beneficial in pertussis, without any marked amelioration of the symptoms. During every severe paroxysm it seems as if this old lady would succumb.

I believe in the very young and in the aged the prognosis of pertussis should always be guarded.

Dr. Leo Bloch: Dr. Meyers has given us an excellent paper, and I have enjoyed it very much. I wish he would state in closing how long he continues the administration of vaccine in pertussis, i. e., does he give it so long as the child has any symptoms of pertussis?

Dr. S. J. Meyers (closing): Answering Dr. Richardson's question in regard to the gas works in connection with pertussis: He is quite correct concerning the custom which prevailed many years ago of having children with pertussis take frequent visits to the city gas plant. Another custom was to keep the child riding on the street cars practically all day. It is most likely that the benefit resulted from the fresh air rather than the inhalation of noxious odors from the gas plant, although it was contended at the time that the gas lessened the frequency and severity of the paroxysms. On the same principle in certain mining districts of Pennsylvania it was formerly the custom to send children with pertussis into the coal mines, and it was said improvement invariably followed such trips. Of course we now know that amelioration of symptoms was entirely due to the fresh air thus obtained.

Dr. Meyers said he did not believe vaccine ever cured pertussis, that it only lessened the severity of the paroxysms: If in vaccine you have an agent which will lessen the severity and frequency of the paroxysms even if it does not absolutely cure the disease, it certainly does more than anything else that has ever been recommended in the treatment of this disease.

In regard to the number of injections: I have seldom given more than four injections of vaccine three or four days apart. However, in several cases where the paroxysms were particularly severe and their duration prolonged, I gave more than four doses; but, like Dr. Coleman, my experience has been that if the disease does not yield to the fourth injection, little benefit may be expected to accrue from further vaccine therapy.

As to the percentage of cases in which benefit was obtained: While in the paper I did not present any accurate figures, I believe in every case vaccine made the paroxysms milder, that it made the disease shorter, and even in those cases where the injections were given late, while the benefit derived was not so appreciable, yet without the vaccine treatment the disease might have been much more severe.

I purposely did not specify in the paper the kind of vaccine used, because it was not my wish to assist in the exploitation of the product of any particular manufacturer; but since Dr. Coleman has asked me the question, there is no objection to stating that I have used the preparation of Parke, Davis & Company, of Detroit, Michigan. The only reason for using that particular preparation is that during the experimental stage of the vaccine treatment they were kind enough to furnish me a quantity of it which I used in treating pertussis last year and the year before. The preparation was then regularly placed upon the market, and as I had already had some experience with it, I continued its use.

Dr. Bizot said he had never seen any benefit from other methods of treatment: I recognized this fact long ago, and tried to emphasize in the paper that not only do you not secure any benefit from other treatment, but noxious drugs. cough mixtures, inhalations, etc., are a detriment rather than beneficial to the child with pertussis.

I disagree with Dr. Barnett that the dosage stated in the paper is too large: If anything I would advocate larger doses. I feel in regard to pertussis vaccine very much as I do about diphtheria antitoxin, i. e., that larger doses than generally recommended are advisable. I have treated infants and older children with vaccine for pertussis, both the combined and the plain, (and while probably I ought not to say this), I have treated so many cases that I no longer measure the dose. I fill my syringe to where it ought to be for the first dose, and after that I am not so particular. The first injection is the only one with which I am especially careful. As stated in the paper I have never seen any reaction, and I do not hesitate to give large doses. I am now treating a child four months old, and the entire contents of one of the tubes was administered in the second injection without any fear of a reaction.

As to the sequelæ: As stated in the paper, since I began the use of vaccine I have observed no sequelæ, nor have there been any complications. The best proof of the pudding is in the eating. I now have in my own family one of the severest cases of pertussis that I have seen in my entire experience. A little girl of four years, who has always had some trouble with her breathing, now has pertussis of the worst type. She has a violent laryngismus stridulus, and every time she has a paroxysm of coughing it seems a question whether or not she will survive. I have given her absolutely no medicine excepting laxatives when necessary. I have treated her with injections of combined vaccine, and while a cure has not been obtained, it has certainly lessened the number and severity of the paroxysms and also shortened their duration.

Someone spoke of the nervous symptoms: My observation has been that nervous phenomena have been markedly minimized since I began using vaccine. As stated in the paper it is important that the child be kept quiet and comfortable, every precaution being taken to prevent irritation and annoyance; in other words one has to literally ''spoil'' the child with pertussis by gratifying every wish and whim in order to lessen the paroxysms.

I have only one other suggestion to make in connection with the administration of pertussis vaccine, and that is to avoid mentioning to the family the pain and other disturbances which may follow the injections. I remember on one occasion I gave the third injection for Dr. H. E. Tuley to four children in the same family. Unwisely, perhaps, I asked the mother if the children had complained of any pain following the previous injections, and she said no. That night about seven-thirty she telephoned me stating that the children were in the greatest distress, and their backs were all sore, etc. By the next morning, however, the pain had subsided, and no further trouble followed. I merely mention this feature because those of you who may later adopt the vaccine treatment may have similar experiences and get excited thinking you have infected the child, and that you have given too large a dose, or that a local abscess will develop at the site of the injection. Nothing of this kind need be feared provided the requisite technique has been used and the injection properly given.

In another case, several hours after an injection of vaccine, the mother called over the telephone and said the child was complaining of "pain in her heart." While I confess I had some misgivings in regard to this case, I told her mother I thought it was merely to some muscular pain due to the injection, and this proved to be the proper explanation.

My experience with pertussis vaccine has been most gratifying, and while I made no pretense of presenting a strictly scientific dissertation on the subject, I wish to particularly emphasize the facts that I have absolutely foresworn all medicine in the treatment of pertussis, and that I am using only vaccine and have had the most brilliant results.

If any mistake has been made in the administration of vaccine it is that we give doses too small rather than too large.

SOCIETY TRANSACTIONS

REPORT OF THE SCIENTIFIC PROCEEDINGS OF THE THIRTY-SECOND ANNUAL CONGRESS OF THE AMERICAN LARYNGOLOGICAL ASSOCIATION

Held in Atlantic City, New Jersey, May 25-27, 1914.

SYMPOSIUM

Empyema of the Nasal Accessory Sinuses in Children under Fourteen Years of Age

The General Considerations of Empyema of the Nasal Accessory Sinues in Children Under Fourteen Years of Age.—By Lewis A. Coffin, M.D., New York. It is indeed remarkable that although case after case of affection of the accessory sinuses in children has been recorded by rhinologists, no mention whatever is made thereof in the textbooks devoted to pediatrics. As a consequence, many cases that have advanced to the suppurative stage might have been prevented and saved much suffering had an early diagnosis been made and proper treatment instituted. In acute conditions and a sinusitis is suspected, there is a copious discharge which may be washed out or otherwise cleared of secretion; if then negative pressure is applied to the nostrils and more pus or mucus found, we may be quite sure that it comes from some of the accessory sinuses.

Children subjected to the test showed streptococci, staphylococci and pneumococci.

The safest form of treatment is in the use of the postnasal douche.

The writer has found great satisfaction in treatment by negative pressure (suction) and the use of autogenous vaccines.

The Pathology of Acute Sinusitis of Children Under Fourteen Years of Age.—By George B. Wood, M.D., Philadelphia. The pathology of acute sinusitis is influenced by the severity of the infection and by resistance of the patient, and upon these two factors depends the degree of inflammation. The characteristic changes found in the mucosa in the mild cases are: congestion and slight edema of the connective tissue, increase in the number of beaker cells in the epithelium, and slight increase in the number of lymph cells in the superficial layers of the connective tissue. In the more severe cases the edema is increased, the congestion more severe and the extravasation of the red blood cells into the connective tissue stroma becomes so intense that the condition resembles a subepithelial hemorrhage. The leucocytic infiltration is marked but still only involves the subepithelial layers of the connective tissue. In only the very severe cases does the whole connective tissue layer become infiltrated so that the periosteum is attacked. Infiltration of the periosteum is very apt to be followed by bone changes. In diphtheria sinus involvement is very frequent, though the majority belong to the mild catarrhal group. In scarlet fever sinusitis is less frequent but more severe, so that bone involvement is quite common. Other infectious disease show nothing peculiar or characteristic.

The Surgical Treatment of Empyema of the Nasal Accessory Sinuses in Children Under Fourteen Years of Age.— By C. G. Coakley, M.D., New York. The writer is convinced that inflammation of the nasal accessory sinuses occurs as frequently in children as it does in adults.

As the sinuses are undeveloped, there is a greater tendency to spontaneous cure.

General anesthesia is necessary for examination, if under five years of age; transillumination is valueless under ten years of age.

In mild cases suction may be used to advantage.

Cases requiring surgical treatment have either a swelling over the antrum or around the orbit.

The antral cases are most always associated with an osteomyelitis of the superior maxilla and are operated through the canine fossa with a counter opening in the nose.

The orbital cases, if mild, are kept in bed with cold compresses and frequent instillation of a 1 per cent. solution of cocain and a 1-20,000 solution of adrenalin. The severer type requires operation without waiting for the development of a radiograph, and is an ethmoid and sphenoid exenteration through the external route.

A probe is passed into the frontal sinus and the diseased membrane must be removed lest there be recurrence; the wound should be left open. There is no consequent deformity.

DISCUSSION.

Dr. Harris P. Mosher, Boston: It is hard to get data on the development and the size of the accessory sinuses in children. Very few bodies of children find their way into the dissecting room, and children make poor subjects for X-rays. Occasionally, however, we do get an X-ray, or have a chance to investigate the sinuses at autopsy. In such instance I have usually been surprised at finding the sinuses larger than I anticipated. This is especially true of the sphenoidal sinus. In one case, a boy of twelve years, the sphenoidal was of average adult dimensions. Most of us, therefore, have to go for our information to the men who have been fortunate enough to have material for making observations upon the sinuses in children. Onodi, who has published a book on the "Accessory Sinuses in Children,," is our chief authority. I have roughly traced some of his plates and grouped and charted his findings. They help to visualize his results. Also, I examined ten X-rays taken of children's heads, in cases where there was a question of fracture of the skull. These rough tracings are also submitted.

According to Onodi, less is accurately known about the maxillary sinus than about the others. Investigation seems to have been focused upon the frontal sinus and the ethmoid cells. The antrum appears in the fourth month of fetal life, and at birth is a cul-de-sac about the size and shape of half of a coffee bean. Tooth buds take possession of the body of the superior maxilla and give the antrum but little room until the second dentition. At this time the antrum enlarges quickly. Another important observation in connection with the antrum in young children is that it is best approached from the nose through the middle meatus. There is but little space under the inferior turbinate, and the wall of the antrum there is much thicker than in adult life.

The ethmoid cells are present at birth, two or three posterior cells, and a like number of anterior cells. The posterior are the larger; a distinction which they retain throughout life. The ethmoid cells increase rapidly in size, relatively much faster than the frontal sinus or the sphenoid. At the thirteenth year the ethmoidal labyrinth is of adult width, and the cells nearly, if not actually, of adult size. An X-ray taken at this period is striking, because the ethmoid labyrinth is wide and apparently fully developed, whereas the frontal sinuses (in comparison) are small.

There is no frontal sinus at birth; only a comma-like fossa at the summit of the unciform groove, which by upward growth is to make the sinus. By the third year the frontal sinus is peeping above the level of the cribriform plate; the sixth year the height and width may measure 10 and 10 mm. The frontals grow very unequally. Onodi figures one case of an eight-and-a-half-year-old child in which an adult sinus was present. From ten to fourteen years it is common to find what might be classed as a small adult sinus. I have tracings of a sinus at ten years, and of one at fourteen years, which illustrate this.

The last accessory sinus is the sphenoid. At birth this sphenoidal sinus has a well formed ostium and a small cavity. By comparison the frontal sinus at this time is far behind the sphenoidal in development.

The order in which the sinuses enlarge seems to be roughly as follows: From birth to the third year the ethmoidal cells have the lead; then the sphenoid starts to enlarge actively; at the sixth year, or the period of second dentition, the antrum becomes active, takes the lead, and ever afterward, holds it. From the sixth year also the frontal sinus, the laggard of the sinuses, increases rapidly.

The gist of the matter is, that from the third year there is an antrum large enough to permit of surgical treatment. The same is true of the ethmoid labyrinth from six years onward, and and of the frontal from the eighth year. From the third year a surgical sphenoid may be expected. Precocious development of the sinuses, and there are numerous cases reported of surgical interference which show this, may make any or all of the sinuses of surgical size before the periods just mentioned.

Dr. Thomas Hubbard, Toledo: I would like to speak of three or four types of cases which have come under my observation, of acute sinusitis in children. First, a young child of six years of age with orbid abscess following measles; this case was seen some time after the initial attack, and there was a sinus which had ruptured through the orbit, and although the child was in good general condition, the parents refused operative interference, yet nevertheless the child recovered. The second is one of the fulminating types of scarlet fever in a girl exposed to the cold after the initial symptoms of fever, and she very suddenly developed acute general sinusitis, and inside of forty-eight-hours there was coma, and death inside of three days. There was one of the cases which are absolutely inoperable. The third type is of scarlet fever of less malignant character, but the initial symptoms were otitis media; very prompt paracentesis; the next day symptoms of marked pharyngitis, and following that the rash and typical symptoms of scarlet fever. Although this child was in the best of hygienic surroundings, with the best of nursing, the ear went on to a suppurative mastoiditis, and a mastoid operation was necessitated about the third week. General sinusitis on both sides was developing with gradually increasing severity; the symptoms were typical and worse on the side of the involved ear. This boy was at that time seven years of age, and the right sinus seemed to reach the maximum of inflammatory disturbance, then gradually subsided. This gave me hopes that the left side would follow suit, but the general systemic disturbance necessitated a general operation upon the left sinus about three weeks after the mastoid operation. A complete radical operation was done, modified. The frontal sinus was involved only in its lower portion, and consequently there was no opening above the orbital ridge. Complete ethmoid exentertation. Probably the sphenoidal sinus was also opened, as was the maxillary antrum, which was thoroughly cleaned out. Three or four days of marked improvement followed, then a relapse with a gradual rise of temperature. Autogenous vaccine made from the granulations taken from the ethmoidal cells was given, with exacerbation of temperature for about forty-eight hours, then marked improvement and complete recovery. The patient was under observation for five years with several severe attacks of rhinitis, but only last winter did he again develop any symptom of pus in any of the sinuses, and here it was necessary to wash out the antrum for a few days, and it then subsided.

Another case is of the subacute chronic type, in a child of six years, brought up on the floor of a basement; he had a succession of acute attacks of coryza, finally resulting in a general suppurative sinusitis involving all the cells on both sides. This boy was treated according to the method suggested by Dr. Coffin. It was impossible to irrigate the antrum more than about six times for after that it produced such a nervous shock that it had to be discontinued. Negative pressure was undertaken every day, about three pounds, to withdraw the pus which was considerable, and after each treatment he would be very comfortable for some hours. There was more or less purulent bronchitis in this boy. We were finally driven to operate, but his condition was so critical that I limited it to an opening from the maxillary antra into the nose. Within twelve hours after operation his temperature was 103.5 degrees and he developed a bronchopneumonia, and I am thoroughly convinced that a prolonged operation would have resulted in death. The antra have since remained comparatively clear, there now being natural drainage, yet eventually, as soon as his condition warrants it, it will be necessary to perform a complete exenteration of the ethmoids.

Dr. Emil Mayer, New York City: There seems to be another class of cases of this affection in children between the two types mentioned by Dr. Coakley, of moderate inflammation and infiltration of the orbit, and of the severest type, and I have recorded such an instance and found to my surprise that all the other cases of a similar kind recovering had the same train of symptoms. All the patients were in the neighborhood of from three to five years of age, and all had the following conditions: an opening or perforation directly under the eye about half an inch, an ectropin, and foul smelling discharge. A probe dropped into the opening over the zygoma went into a cavity and turned toward the nose and was easily pushed into the nose. In my own case an external operation, consisting of linear excision, curetting and drainage through the nose, was followed by complete cure.

Dr. William E. Casselberry, Chicago: I wish to speak of a chronic type of case, particularly of a conservative operation that I have before spoken of, which, although these cases are in children, they are in the older children, and which I have found feasible in them. They affect children anywhere from nine to fourteen years of age. It is the kind of case you see frequently even in older people—nasal polypi in the middle meatus, polypoid enlargement of the middle turbinate, and pus in the antrum and anterior ethmodial cells, and sometimes in the posterior ethmoidal cells. These polypi, if removed one week, will be there again next week, developing with extreme rapidity. If removed, however, together with the better part of the middle turbinate, and at the same time you go a little higher and take the floor of the anterior ethmodial cells, they do not return within the month, as before. This operation I have found feasible in a limited number of cases under cocaine anesthesia. Occasionally I have had to give a general anesthetic. I recall one which resulted in such an amount of recovery that it has required no further operative procedures. The subject was impressed upon me by a child upon whom I did not succeed in making such an operation, and in whom I should have urged either an external or an internal operation under a general anesthetic. She was a beautiful girl, a blonde, in whom to propose any external procedure to the parents would have seemed like a sacrilege. I removed, in the fighting child, polyps from time to time as best I could without middle turbinectomy. I cleansed the nose and washed the antrum.

The thing went along for three or four years, when, as she was traveling on the Rhine, she became suddenly seized with a severe headache, was taken off the boat to a hotel, and put under the care of an English surgeon, who said she had meningitis, and she died within a few days. There is always this menace, even in children, and I believe it our duty to establish drainage. I do not believe it our duty to establish that drainage instead of doing an external operation, if such seems necessary, yet in many cases internal drainage will be quite sufficient.

Dr. Robert C. Myles, New York City: The fundamental principles of these chronic cases, in my opinion, are the securing of proper drainage and resolves itself into a surgical mechanical proposition. I think we have been a little conservative in not teaching more frequently there intranasal operations on the ethmoid and antrum of Highmore, in children under puberty. It is astonishing how a child can be trained to allow you to do it under cocaine. I have started by opening the ethmoid cells, and before finishing have succeeded as well as though the patient were a grown person. I have used cocaine frequently by hypodermic, and in this way it renders the operation quite painless if injection be made into the middle turbinal region The exenteration of the bullæ ethmoidalis and the anterior ethmoidals has frequently been most successful. I believe we will be able a little later to open the antrum more successfully by enlarging the upper lobe and securing drainage in that way, doing no permanent harm, but effecting permanent drainage, and thus pave the way for the future irrigation if necessary.

In a case of mucocele, if you make a permanent opening through the nose you will get the best results. In cases of chronic suppuration, those preceding atropic rhinitis, it has been my custom to find the drainage fairly good. I have used in conjunction with other treatment a powder of aristol and boric acid, insafflating half a grain once a day into the nose at night; and I do not know whether it is the iodin generated from the aristol or what it is, but it seems to me that the causal factor of suppurative rhinitis which terminates in atropic rhinitis is sometimes completely arrested. In conjunction I use ichthyol as an ointment.

Dr. G. Ross Skillern, Philadelphia: It is astonishing how few cases have really come under observation and been diagnosed as such. I do not mean the acute cases, which we see in conjunction with the acute conditions, but the truly chronic cases. In the pediatric department of the hospital with which I am connected. there are a great many cases of children's diseases. and very frequently the laryngologic department is called upon to examine patients for sinus trouble, and in the last year I do not know of more than one or two well-marked cases of sinus trouble which we have been able to diagnose. This may be due to the fact that in the sinuses in children the mucosa and the underlying bone are so intimately associated and connected that we do not seem to have the same condition as shown in the text books pertaining to the adult, yet it seems that the cases are fulminating in type. In the operations we have done, mostly by the internal method, the bones are softened and broken down, showing a condition of infection of the entire wall of the nasal cavity of one or both sides.

In some of these bad eye cases it is absolutely necessary to go into the ethmoidals, but in the majority of patients we should try the intranasal methods first, and the conservative methods, because at the best we are working under very disagreeable circumstances

Dr. Hanau W. Loeb, St. Louis: The most unsatisfactory class of case of any type that can come under our observation is that of bilateral suppuration which without definite proof seems to come largely from the accessory sinuses in children. The nostril is exceedingly small, so that it is almost impossible to get a satisfactory view, the nose being really a duct, and for that reason not sufficiently developed to take care of the situation.

Dr. Virginius Dabney, Washington: I would first refer to a trinity of symptoms in the acute cases. First, there is the high temperature, frequently 104 degrees, quite unassociated with influenza or bronchial trouble. This I think is particularly remarkable when we remember the prolonged convalescence. I have under observation a case which has been irrigated six times a day for ten days, with an immense amount of discharge. The case was not easily diagnosed; it was seen on the third day with an internist, but it was only by exclusion that we arrived at the diagnosis. Pressure on the canine fossa was painful, and also pressure over the supraorbital ridge. There was high temperature and all the train of symptoms which are recorded as typical, after three weeks of apparent cure. Under irrigation in these cases the temperature comes down to 99 degrees for ten days or so, then there is an exacerbation from a reaccumulation of pus. I would cite one case of a boy who went wading two weeks ago in a public fountain; no bronchitis, temperature suddenly shot up to 104 degrees. The pediatrist said he had colitis, etc. What he had was a pure infection of the antrum of Highmore, and this cleared under irrigation.

Dr. John F. Barnhill, Indianapolis: I believe that we should do more than we have done heretofore in enlightening the general practitioner and surgeon as to the exact cause and number of cases that may arise from sinus disease. If we attempt to find out how frequently meningitis results from these sinuses, we are greatly handicapped.

I have had an opportunity of seeing a number of cases in which there was lack of fever, pain and distress, the thing which we did find being the great exopthalmos with swelling of the lid and discharge of pus into the nose. Recently I had a child of thirteen years, in which there were no symptoms except this great exophthalmos and discharging fistula at the external angle of the eye. At operation I found the entire anterior and lower wall of the sinus necrosed, and it had to be taken away.

Dr. Coakley spoke of doing a secondary operation, leaving an external drain in the cases operated on by the semi-Killian method. It seems to me that we should do this at one operation, by making the drain large enough into the nose.

Dr. Greenfield Sluder, St. Louis: The sphenoidal sinus develops very early; specimens showed that by the complection of the second year of life the extension of the sphenoid, although scanty from anterposterior measurements, was as far as the foramen rotundum laterally, and at the sixth year it had reached the vidion canal. Both the vidian and the second division of the fifth nerves come closely associated with the wall of the sphenoid, and I believe this fact offers the explanation for the recurring headaches in children which are sometimes seen as early as the tenth year; and I feel more convinced than I did last year, because during the interval I have seen the sphenoid put out an eye, and paralyze the third division, where the picture in a tractable child of ten years showed a polypoid swelling over the olfactory fossa, completely filling it and bathed in pus from above. In the course of twenty-four house that polyp disappeared under shrinkage, and the last vestige of pus with it. Under constant watching no further pus was found. In that particular case the second division of the fifth nerve and the vidian nerve took part in the pain. The treatment was satisfactory, the third division came back into almost complete function, although there is still a difference of two diopters prism. That case lost its malignant type as soon as the shrinkage took place. It was not operated upon.

Dr. Harris P. Mosher, Boston: Among the cases which have come to my attention, there have been two which I could not miss; in each there was a fistula under the eye which when investigated led to the antrum or nose.

Dr. Coakley's remarks regarding the slow pulse in acute ethmoiditis interested me. This suggests to me some cranial pressure, and I would like to know if that is his explanation.

Dr. Lewis A. Coffin, New York City (in closing): I selected the eye department of our hospital as the one in which to try out my method. I took an old aspirating apparatus with a vacuum in a big bottle, and cut off the tip of a rubber ink dropper and stuck the little end into the tube. By putting this to the patient's nose we found the dropper filling up at once.

With regard to the type of case cited by Dr. Mayer, there is such a type. I have a different feeling from him on the matter. I find that it is pathognomonic of an osteomyletis and involvment of the alveoli, and the alveoli are diseased, and if probed it will bend toward the nose and will be easily pushed in. Very possibly the antrum is diseased also. The next case any one of you have I would suggest that you make a very careful examination of the alveoli.

In regard to the treatment of children intranasally, in taking out polyps, ethmoids, etc., we must differ very much in the class of children we treat. I could not do it in my patients under seven years of age; I do not own or know of sufficiently small instruments for this work.

In regard to the size of the sphenoid, there is a difference in Dr. Wood's and Dr. Mosher's statements. I have had some experience and beileve that Dr. Mosher, who stated that the ostium was well developed with quite a cavity back of it at birth, is correct.

Dr. George B. Wood, Philadelphia (in closing): I would add just a word regarding the development of the sphenoid. In my own experience I have never seen a sphenoidal cavity under one year of age which I could recognize. I have cut sphenoids in children six months of age without the slightest sign of a cavity. Others state that it becomes of surgical importance from four to six years of age, and may be recognized occasionally as a dimple on the anterior edge of the sphenoid body during the first year.

Dr. Cornelius G. Coakley, New York City (in closing): In the radiography of children there is certainly a frontal sinus well above the orbital ridge in children three years of age. One explanation may be that these children with discharge and diseased frontal sinuses may have abnormal development.

As regards the instruments for intranasal work referred to by Dr. Coffin, I would state that Pfau is now making instruments identical with those for the adult.

As to the size of the sphenoid, I had occasion to operate on a child with orbital cellulitis about a year and a half old, and there was a sphenoidal cavity the size of a hazelnut. The child died of laryngeal diphtheria three weeks later and we proved the size of this sphenoid at autopsy. Infection is more likely to come from the frontal sinus, but in the clinic cases I have seen it has come through an orbital cellulitis. The frontal sinus has not been involved particularly, and I think that an orbital cellulitis secondary to sinus disease is the thing which is very liable to extend into the brain.

With regard to the low pulse, I would say that in two cases I have examined the spinal fluid and there has been no infection, and in twenty-four hours after, through opening of the abscess, the pulse has come up and run very high, showing that the slowness of the previous rate was probably due to compression. The bone in all these cases has been of peculiar leathery consistency, requiring a forceps to get it out.

I can agree entirely with Dr. Coffin in his explanation of Dr. Mayer's case. Such are due either to necrosis of the superior maxilla or ethmoid, which has ruptured spontaneously, and such cases go to the eye man.

These cases, so far as I have been able to determine, have usually been streptococcic. The reason I leave the wound open is because I would do so with a streptococcic infection in the mastoid, and I believe in the type of cases I am speaking of, tense, shiny glaze of the orbit, if you close the wound you are in danger of keeping up the cellulitis and producing an extenuation into the cerebral cavity. You frequently get no more scar following drainage, although it may be wider and redder for the first four or five months, yet at the end of the year you cannot tell whether it has been closed primarily or healed by secondary closure. I got this idea of leaving the wound open in such cases from Killan.

RETROSPECT OF CURRENT PEDIATRIC LITERATURE

Orthopedic Surgery

Under the Charge of

JAMES K. YOUNG, M. D.

Professor Orthopedic Surgery, Philadelphia Polyclinic; Clinical Professor Old thopedic Surgery, Women's Med. College, Philadelphia.

Assisted by

A. BRUCE GILL, M. D.

Assist. Surgeon to Widener Memorial Industrial Training School for Cripper Children, Philadelphia.

Original Surgical Uses of the Bone-Graft.—By Fred H. Albee, Surg., Gyn., and Obstethics, June, 1914.

This paper is based on an experience of 253 cases within a period of over three years, together with a large number of experiments upon animals.

The author believes that a bone graft will invariably live when taken with its periosteum and endosteum and the inner layer of the periosteum are osteogenetic; and all parts of the bone should be included in the graft. The presence of a number of small pieces of bone will aid in rapid union of the principal graft with the recipient bone. The bone graft stimulates osteogenesis in the bone with which it is in contact, and it has some resistance to bacteria. Bone grafts, when in good contact with the recipient bone, immediately become adherent to it and present solid bony union in four weeks time. Therefore, they should be used in preference to metal plates in securing union of fractures, as the plates in themselves inhibit bone production and, indeed, produce absorption.

Albee has employed the bone-graft in the following conditions: Pott's disease, congenital club-foot, ununited fractures, paralytic foot deformities, tuberculosis of the ankle, osteomyelitic cavities, absence of head and neck of femur, paralytic wrist-drop, under development of the jaw, tuberculosis of the knee, spina bifinda, paralytic and congenital dislocations of the hip, paralytic scoliosis, depression of the bridge of the nose, tuberculosis of socio-iliac joint, ununited fracture of the spine: congenital absence of the tibra, osteo-sarcoma and fracture of the neck of the femur.

Many of these operations would be almost impossible without the use of such instruments as the electric motor, twin circular saws, drills, burrs and dowels. The author describes in full his technique take this kind of work, and it indicates what a tremendously large in these various operations.

This paper is one of the greatest value to all surgeons who underfield has been opened up in the surgery of the human skeleton.

Chemical and Experimental Results of Streptococic Infections with special reference to arthritis and its treatment.—By F. G. Dyas, Surg., Gyn. and Obstetrics, June, 1914.

Rabbits were injected intravenously with a 24 hour culture of streptococci suspended in normal salt solution. The strain of organism was obtained from the tonsils of a person suffering with chronic infective arthrites, multiple infective arthrites resulted all cases in from 24 to 72 hours. Destruction of the structures of the joint occurs in ime, if the animal does not die too soon of strepticocci septicaemia. Cultures from the pus in the joints and from the blood in the heart gave pine cultures of the streptococcus. The greatest changes occurred in those joints into which formalin or iodoform had been injected in an attempt to protect them. Aspiration of the pus from a joint followed by injection of antiseptics did not give favorable results in these cases.

Present Status of Joint Diseases and Best Method of Treatment.—By Emil G. Beck Surg., Gyn., and Obstetrics, June, 1914.

Disease of a joint is due in all cases to a secondary infection which reaches it through the blood, except in those cases due to direct injury of the joint. The infection is pyemic, tuberculosis, or syphilitic. In the chronic polyarticular cases of arthritis the etiology has not yet been fully established.

The sterosc.pic radiograph is a very valuable aid in establishing a differential diagnosis.

Cold abcesses should not be opened and drained with a tube as secondary infection follows and produces serious, if not fatal results. They should be aspirated with a trocar and then injected with some such substance as bismuth paste. If secondary infection should **occur** in spite of this treatment, Beck advises the use of his bismuth paste which he believes will cure at least fifty per cent. of these apparently hopeless cases.

The Rollier heliotherapy will also cure a large percentage of tuberculosis bone and joint lesions, even in the presence of open sinuses.

Likewise massive doses of the X-rays have been effective of cure in the hands of Baish, Iselin, Schede and others.

Garre has reported a collection of over a thousand cases of tuberculosis treated surgically in various European climes, and shows that operative procedures give a very high mortality compared with conservative methods of treatment.

Treatment of Lateral Curvature of the Spine.—By James K Young. The Charlotte Med. Jour., June, 1914.

Two types of scoliosis are to be considered; the functional, and the organic. In the former, the spine is not fixed and the scoliosis can be made to disappear because there have been no changes in the size and shape of the vertebrae and theubs. In the latter, changes have occurred in the bones and the scoliosis will not disappear when the patient assumes a bending posture.

The functional type will yield to treatment by gymnastic exercises that aim to develop the weak muscles of the back until they become equal to the stronger backmuscles, at the same time strengthening all the muscles. The lower extremities should also be developed and any tndency to flat-foot or knock-knee corrected. After correction of the spine is secured, exercises should be continued to prevent relapse. The patient should live under the best hygienic conditions possible.

Fixed scoliosis was deemed incurable a few years ago, but the brilliant results now obtained by Abbott and others demonstrate that many of these cases can either be cured or at least highly benefited. This method of treatment is one of forcible correction. The patient is placed on a hammock in a special frame and the spine is forcibly rotated and the lateral bending is corrected and a heavy plaster jacket is then applied in the corrected position. Large windows are cut in the cast to allow the hollow places to bulge out and to place pads over the prominent parts in order to force the body over. A number of casts may be applied successively to over-correct the spine, and then a brace in celluloid jacket is worn, and at the same time, exercises are given to strengthen the musculature of the back. The after treatment must be long continued. Only selected cases should be treated by this forcible method as it is always more or less dangerous and severe.

Infectious Diseases.

Under the Chare of

ST. GEO. T. GRINNAN, M. D.

Associate Professor Pediatrics, Medical College of Virginia; Visiting Pediatrist, Memorial Hospital, Richmond, Va.

Etiology of the Infectious Diseases—Within the past few years our knowledge of the etiology of the infectious diseases has greatly increased. In an address delivered before the Richmond Academy of Medicine and Surgery on February 10, 1914, and published in Public Health Reports, April 3, 1914, Dr. John Anderson, Director of the Hygienic Laboratory, dwelt on the recent additions to our knowledge of the etiology of the infectious diseases. He pointed out that while very recent years have witnessed remarkable advances in our knowledge of many of the phenomena of disease, in our understanding of its true nature, there was a period not long ago in which little was done to forward our knowledge of some important infectious diseases endemic almost throughout the civilized world, and research workers realized that new methods or agencies must be employed. It has been due to the recognition and application of certain methods and agencies of research that our present understanding has been obtained.

Furthermore, pari passu with the advance of knowledge in this direction has come the discovery that some diseases formerly thought not to be communicable really belong to the infectious class. Poliomylitis is the most outstanding example. The use of the monkeys as an experimental animal, according to Anderson, has contributed more than any other single factor to the important recent additions to our knowledge of the acute infections. Another important advance, to which attention was drawn by the speaker was in the adoption of methods of experiment by which the infective material was introduced into the body so that it was brought into immediate contact with the organs or tissues primarily and most seriously affected in the natural disease, as in experimental meningitis and poliomyelitis, where the infective material is put directly into the cranial or spinal cavity.

The progress of knowledge regarding the infectious diseases in a comparatively short space of time has been wonderful, and has paved the way to the prevention and treatment of these maladies. In the field of medical research, American investigators have played a prominent part, and probably no living student of medical research has done more to clear up obscure points in the origin of diseases than Theobald Smith.—Medical Record, July 4, 1914.

Dispensing with Isolation in Scarlet Fever and Measles.—M. Nagcotte-Wilbouchewitch urges the general adoption of Robert Milne's method in these infections. At the outset applications to the tonsils and pharynx of a ten per cent. solution of phenol in olive oil are begun; repeated every two hours for twenty-four hours in scarlatina, in measles, three times a day for several days more. Oil of eucalyptus is applied to the entire body, from scalp to toes, morning and evening for the first four days, then once daily until the tenth day. The patient is kept in bed from the beginning. Protection is afforded other persons by placing over the patient a large wooden ring, from which light, transparent gauze hangs to the bed. On this gauze oil of eucalyptus is sprinkled. The effect is to shorten the disease and prevent complications. No further isolation is required. The patients are kept exposed to the eucalyptus by placing ten or fifteen drops of the oil on a piece of cloth to be worn near the body and by spraying it on the pillows.

Protection of the Infant Against Tuberculosis.—P. Nobecourt, and G. Schreiber (Arch. de med. des enf., Apr. 17, 1914) consider it of the greatest impotance for its protection against tuberculosis to separate a young child from any relativees who have tuberculosis. He is not born tuberculous: tuberculosis is exceptionally hereditary. It is contracted in infancy from the surroundings. It may be prevented if the child is removed from the infected home. The proportion of infants infected increases rapidly with age, therefore to be effectual, removal must take place early. There should be centers for placing out infants who are in danger of tuberculosis; parents of infants born in infected surroundings should be induced to remove their children from the home, and place them in the country. There should be centers for the bringing up of children, well superintended, and easily inspected medically. They may be in the country, in the mountains, or at the sea shore.

Serum Treatment of Gonorrheal Ophthalmia in the New-born.—V. Morax (Ann. de gyn. et d'obst., March, 1914) compares his results in the treatment of gonorrheal ophthalmia in the new-born with nitrate of silver and argyrol, and those obtained by injections of the new gonococcic serum of Nicolle and Blaizot. His ordinary treatment is the daily use of 2 per cent. silver nitrate solution and hourly washings with physiological salt solution and this has given good results. Out of 110 cases there were but nine of corneal ulceration with perforation, and out of these nine in six there was ulceration when treatment began. Only a small number of cases have as yet been treated with the vaccine. Its effects on the symptoms have not been encouraging. The writers conclude that if this vaccine is used it should be combined with treatment with nitrate of silver and argyrol, if we would save the largest possible number of eyes.

Contagion of Scarlet Fever after Return from Hospital.—W. Knopfelmacher and R. Hahn (Monatsschir. f. Kinderheil., bd. xii., Nr. 11, 1914) have investigated the method of infection of fresh cases of scarlet fever fever by a child returning from isolation at a hospital. That this is of frequent occurrence has been shown by the statistics of various authors, which give 3 to 9 per cent. of infections. An acute case of scarlet fever contains the virus in blood, throat, nasopharynx, and skin. Rubbing of the virus from the nose and throat into the mucosa of the chimpanzee has shown its undoubted virulence. It is possible also that healthy persons may be carriers of the virus if attending such cases. Or the cured person may carry either his own virus, or a virus obtained from fresh cases with which he comes into contact. Not being susceptible himself he may still carry the germs in nose and throat. The experience of the authors includes cases isolated from 1898 to 1912, 1909 in all. Of these, forty-one cases returning home infected, forty-nine other children in their families, and two mothers. The severity of the epidemic, and the number of cases affected has no relation to the number of fresh cases produced. Most of the children remain a full six weeks at the hospital. A mild case may carry the disease home as well as a severe one. Great care was always taken that the cure of the throat and nose affection was complete before the children went home. The skin was carefully bathed and disinfected and the clothing in which the child came to the hospital was carefully disinfected by steam before it went home, so that the authors believe that it was quite impossible for either the skin or clothing to have carried the virus. The only means of carriage of the infection that is left is the throat and nose of the convalescent child. The minimum interval between return home and a fresh case was one day, the maximum fifty-nine days, and sixty-seven days. The conclusion of the authors is that the present method of isolation of all cases in one ward is faulty. They believe that each case should be isolated in a separate box, so that no other case may cause fresh infection. This will be expensive and irksome, still it should be tried. For the first twenty days each case should be separately isolated and after that all convalescent cases may be put in one ward.

Diseases of the Skin and Uro-Genital System

Under the Charge of

KENNETH BUCKLEY, A.B., M.D.

New York City

Treatment of Eczema of Nurslings with Pellidol Ointment.—Erich Rominger (Arch. f. Kinderheil., April 1, 1914) has found good results in skin diseases of intnas from the use of pellidol which contains a substance related to scarlet red, diacetyl-amido-toluol, and has a good effect on the epithelial structures. The author made use of this ointment in fifteen private cases of skin disease, using the salve alone without changing the diet and hygiene. In the clinic there were fourteen such cases—five of eczema, seven of intertrigo, one of pemphigus neonatorum, and one of impetigo contagiosa. The crusts were first removed with oil, and the pellidol salve smeared on gauze and applied to the diseased surface, being changed daily, and the patient being prevented from scratching by covering the hands with sleeves. In eczema of the head and face the exuding surface soon became dry and healthy epithelium covered it Wet cases received the most benefit. If a 1 per cent. salve was used the effect was good, while a 2 per cent. salve caused redness and irritation, which rendered healing slow. In the seven cases of intertrigo, healing soon took place. The other skin diseases were similarly affected.

Acute Noncalculous Cholecystitis in a Child.—Frederick C. Pybus described a case of this rare affection occurring in a boy six years old. The onset was marked by persistent vomiting, pain in the abdomen, and fever. A mass and local tenderness could be made out in the right upper quadrant of the abdomen, and the diagnosis of subhepatic appendicitis was made. At the laparotomy, the gallbladder was found much distended and pus was aspirated from it. No stones were present or in the ducts. Drainage was followed by recovery and a cure. Bacillus coli was isolated from the pus. Only five other cases of this condition have been recorded in the literature.

Enuresis—Nocturnal.—Dr. John Ruhrah, in the Amer. Jour. Med. Sciences, says: Among the more interesting of the newer suggestions as to treatment are the results of Williams in treating these cases by the use of desiccated thyroid. His cases had subnormal temperature and evidence of thyroid insufficiency, and he obtained wonderfully satisfactory results in all except one case, and in this case the child did not have a subnormal temperature. Williams gave one-half grain of the dried thyroid twice daily to children between two and six years of age and this may be increased for older children. The increase in dosage should be made slowly as directly opposite effects are occasionally induced by overdosage. Ruhrah has used this method and in a small proportion of cases in which there were more or less marked signs of thyroid insufficiency, the results were quite remarkable. These were children with adenoids and enlarged tonsils, or in some cases, children in whom the adenoids or tonsils had been recently removed. In his cases the effect was obtained promptly or not at all. In every case in which a favorable result was obtained, a marked difference was noticed after the administration of one or two doses of the drug, and in all cases within a week. Another remarkable observation coinciding wih that of Williams' is that the undersized children gained weight rapidly. When there is no other indication for treatment he has found the use of atropin to give better results in a greater number o cases than any other one thing, and to be of any service it must be given in full dosts. In nocturnal cases a dose at five o'clock and at bedtime is all that is required. In cases occurring both during the day and night the drug is advised every three hours. He usually prescribed one grain of atropin sulphate in two ounces of water, each drop containing about 1-1000 grain, and usually as many drops will be required as the child is years old. The proper method of dosage, however, is to start with one or two drops, increasing each dose one drop at a time until flushing of the face and neck occurs some twenty minutes after taking the drug. The dose should then be diminished one drop, and thus amount continued until the child has ceased urinating at night and for at least two weeks later, when the drug may be dropped gradually, diminishing a drop at a time until one drop is reached when it may be stopped.

Acute Non-Calculous Cholecystitis in a Child.—F. C. Pybus reports a case of this condition in a boy aged six years, who was admitted to the hospital with a diagnosis of appendicitis. The history was that the child had a bilious attack and vomited a good deal. The vomiting was repeated for three days, during which time there was no constipation or abdominal pain. The boy then appeared fairly well for two days. On the day before admission he was again vomiting and had severe abdominal pain on the right side. On admission the child looked ill, had a temperature o 101 degrees F. and pulse 132. He looked pale and was sweating. The pain was over the upper part of the right rectus. On abdominal examination some distention was noticed in the upper abdomen on the right side. There were rigidity and tenderness over the upper part of the right rectus. The right iliac fossa was slightly tender but not rigid. The remainder of the abdomen was flaccid and not tender. On more careful examination a definite mass could be felt under the right rectus, and this part was dull on percussion. An operation was performed at once, revealing an enlarged and inflamed gall-bladder. This was about the size of a hen's egg, and was tense and green in color, the vessels being injected. An exploring syringe drew off some bile-stained pus. The symptoms and signs of acute cholecystitis in children very closely resemble those occurring in the adult. Khantz, in a paper quoted by Moynihan, states that he has found in the literature a record of only five cases of non-calculous cholecystitis in children. Three of these were secondary to scarlet fever, enteric ever, and appendicitis. Cholecystectomy was perormed on four patients, and in three instances with success.

Treatment of Gonorrheal Vulvovaginitis in Children.—Max Strasberg treated six cases with intramuscular injections of arthigon, a polyvalent gonococcic vaccine, and reports three cures. These three children had had other treatment for several weks previously, the injections being the final step in the therapy. Iocally, he has employed medicated bougies containing different percentages of powdered uranoblen, a combination of silver and uranin, containing forty per cent. of the ormer. They are of a gelatinous nature, and dissolve easily at body temperature. The children are allowed to urinate and the vagina is cleansed with warm water. A small bougie is then in the urethra until it disappears, and one into the vagina. When placing the bougies into the vagina, they should be so placed that they alternately lie in the anterior and posterior fornices. Cotton is then placed between the labia and a T bandage applied. The children lie in bed for an hour. As long as the secretion is profuse two treatments are given daily, using a two per cent. bougie for the vagina; later when the urine becomes clear, four per cent. bougies are inserted once daily. This procedure secured good results in most cases, even ambulatory responding to this form of treatment.

BOOK REVIEWS

The Faeces of Children and Adults, Their Examination and Diagnostic Significance with Indications for Treatment. By P. J. Cammidge, M.D. (Lond.) Octavo, 524 pages. Illustrated by 13 full-page plates, 7 of which are colored, and 96 engravings in the text. Extra muslin, $5.00 net. William Wood & Co., Medical Publishers, 51 Fifth avenue, New York.

The subject covered by this manual is one of considerable interest to pediatricians, general practitioners, and especially as an aid in arriving at diagnoses. The author has culled a mine of information from his own experience during the past fifteen years, during which time he has examined many thousand specimens of faeces. He has also drawn extensively on the work of Hecht, Schmidt and Strasburger. The practical part of this manual follows to a great extent, the sequence which the author found most advantageous in making examinations of faeces.

The first eight chapters are devoted to the various methods of examination, as well as directions for detecting certain animal parasites The last two chapters are devoted to a consideration of the clinical inferences to be drawn from the results of the analyses described in the first eight chapters.

The book will be found especially valuable to the physiological chemist, pediatricians and the general practitioner. It is the best work of its kind that has been the pleasure of the reviewer to examine, and we highly commend it to all interested in this subject.

Materia Medica for Nurses. By A. S. Blumgarten, M.D., Instructor in Materia Medica at the German Hospital Training School for Nurses, New York. Illustrated, Cloth, 627 pages, 8vo, Cross Index, price $2.50. New York, The Macmillan Company, 1914.

This book marks a new era in the teaching of nurses. The author seems to have struck the right keynote in presenting the subject in remarkable, simple, yet concise manner, without any sacrifice of scientific facts. The book is primarily a teaching book and embodies well established, definite pedagogic principles which makes it admirably adapted for the use of nurses.

There are several new, unusual features which make the book particularly valuable. The most important of these are the descriptions of the "appearance of the patients" after the administration of each drug. The author gives vivid clinical pictures of the effects of drugs on actual patients in the wards so as to enable the nurse to fix these firmly in her mind. The book also contains a large number of useful tables which are of very great practical importance, such as the table of saturation points, the table of cardiac stimulants, the table of comparative action of various drugs, etc. The systematic arrangement of the pharmacological action makes these very easy to remember.

A new feature, so vital to nurses, and yet one which has, strangely enough, been left out of textbooks for nursing, is the chapter on solutions Here, the author gives in a simple, concise way, very ingenious, simple practical rules for the calculation of solutions and for the administration of drugs for internal and hypodermic use. The book is also particularly valuable as a reference book since it contains among the preparations all the latest products that have been accepted by the Council of Pharmacy of the American Medical Association. The finding of the various preparations is also very much facilitated by the unusual arrangement of the remarkable good cross index in the order of the importance of the references, and not in the arrangement of their numerical places in the book. The book contains a vast amount of practical information which makes it extremely valuable to the physician as well as the nurse.

PEDIATRICS

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EDITORIAL

HEADACHE IN CHILDREN

The frequency and significance of headache in very young children is a subject to which adequate importance is, perhaps, seldom attached by the average practitioner. It is often a sympton of organic and functional disease, sometimes of a serious nature. Acute headache with rising temperature is common as a prodromal symptom of the infectious or toxic diseases, and its character and concomitants are of diagnostic value.

In tuberculous meningitis, for instance, the intensity of the pain is disproportionate to the degree of pyrexia. It is not very intense, but rather constant, and shifting the position of the patient has no effect upon it, but it produces a craving for rest and quiet. An acute headache, accompanied by vomiting, and a slow and irregular pulse is indicative of meningitis.

Chronic headache, on the other hand, may proceed, among other causes, from rapid growth. At least, such is the conclusion reached by Cattaneo (Clin. Med.). He notes that it is often observed in rapidly growing boys at the age of nine to eleven years, generally occurring in the morning and in a frontal location. Such headaches cease with the period of rapid growth, but may generally be dissipated by rest and tonics, as they are aggravated by overwork. Vague pains in other parts of the body, especially in the knees, are often complained of at the same time, and the children suffering from them are invariably of the nervous type. Occasionally they are found to have epiphysitis or cardiac hypertrophy.

Physical or mental fatigue, carried to excess, will produce headache in children, and thus it is of common occurrence in school children, either those who are exceptionally quick and ambitious and eager to subject themselves to extra strain, or among those who are slow and "backward" to a degree that makes the accomplishment of ordinary tasks a painful effort.

Defective vision, especially errors of refraction, has long been recognized as a prolific source of headache, as are also naso-pharyngeal obstruction, otitis and carious teeth. Often headaches may be attributed, with other characteristic symptoms, to anemia, which may, in turn, be due to nephritis following some infectious fever, and quite unsuspected.

Auto-intoxication, arising most frequently in the intestinal tract, will also cause headaches in children, and may be traced not only to disease, but quite as frequently to parasites or to simple constipation. In such headaches regulation of the diet and bowels it indicated. More rarely external causes of intoxication can be discovered, in the shape of drugs or lead poisoning or carbonic acid gas.

Periodical attacks of headache, unaccompanied by fever, are observed in malaria. A chill and an enlarged spleen may accompany this headache, which is of a neuralgic character and generally supraorbital in lacotion.

Cattaneo has found hemicrania fairly frequent in young children, and often associated with other rheumatic manifestations. He also discusses in his article the organic cerebral lesions, cerebral tumors and syphilis as related to the symptoms of headache, and after reading a contribution to the study of this subject one would not be apt to neglect or minimize in importance any headache occurring in a child.

THE HARD LOT OF THE FIRST-BORN

Since the days of Esau and Jacob, if not earlier, the younger son has not uncommonly felt some degree of envy for his elder, and as he thought, more fortunate brother. For the eldest there has been the easy lot, the soft place; for the younger the hardship, and the struggle with the world. Professor Karl Pearson, however, comes now to show us that the first-born is truly the unfortunate one of the family, for on him, by virtue of his very precedence, falls an undue share of whatever infirmity or defect may be inherent in the family. He is the heir of the family ills, as well as goods. In a recent lecture Professor Pearson points out that the limited families of today render the condition of the first-born of special importance to the community. There is, it is shown by statistics, a double proportion of still-births among first-births—40 to 1,000, as against 20 per 1,000 for second births. Measurements of new-born children showed that first-born were both the lightest and shortest at birth. Riffel, in Germany, found an undue preponderance of tuberculosis among eldest children, and Dr. Heron found the eldest child more often insane than other members of the family. Sir Arthur Mitchell in 1855 showed the same point as regards idiocy, and Dr. Goring recently demonstrated an excess of criminality among first-born. Such a defect as albinism is said also chiefly to affect the eldest. Truly, those of us who used to think we were unfortunate in being younger sons must now congratulate ourselves. —Medical Press.

"TWILIGHT SLEEP"

Two lay magazines, with a combined circulation of more than two million copies are conducting one of the most aggressive campaigns of publicity ever undertaken in this country. These periodicals have got hold of the fact that it is possible to make childbirth painless, through the use of scopolamine (hyoscine) and morphine, and they are spreading this knowledge broadcast. Within six months there will not be an intelligent woman in America who doesn't know about this method. When these women learn that it really is possible to escape the terrible pangs of labor, and that you can help them to take advantage of it in their home, they will be clamoring at your door for the "twilight sleep" when the time approaches for the baby to come.

"What is this wonder-working thing, this "twilight sleep?" asks the Ladies World; and it answers: "Nothing in the world but the skillful use of anesthetics to produce that very fine balance between the states of consciousness and unconsciousness where the patient cannot recollect immediate sensations, such as pain, yet is in full possession of her muscular power and her will to help. These are the ideal conditions for a safe, normal, painless birth. They have been obtained by the great physicians of Germany. They can be obtained by the equally skillful doctors of America. They can be obtained in your town and mine, in the childless home of that terrified young husband, in your home and your daughter's home—everywhere."

All that can be accomplished with scopolamine and morphine, at Freiburg or elsewhere, can be accomplished—is being accomplished in thousands of cases.

The "twilight sleep" is available for you in your town, in your practice. In H-M-C are provided the necessary drugs, in proper combination, to meet most obstetrical conditions.

The Battle Creek Sanitarium

The Battle Creek Sanitarium has dispelled practically all the prejudice once felt against it, and now has the respect of the entire medical profession.

This institution is doing a work that cannot be done in the small sanitorium, as the well-conducted small sanitorium is doing a work the former cannot do.

It is only proper and right that each should do its work for humanity.

With a staff of 30 physicians, 300 nurses and trained attendants, and 600 other employees, it is apparent that the institution has size. Its popularity is evidence that it has merit. It has treated over 5,000 members of physicians' families; and it extends an invitation to every physician to be its guest for three days, and to receive its treatments of every form free during that time.

Such methods of doing business commend the institution to all fair-minded physicians.

American Journal of Surgery

The American Journal of Surgery will issue a quarterly supplement of 32 pages beginning October 1st, devoted exclusively to anesthesia and analgesia.

PEDIATRICS

ORIGINAL ARTICLES

ACUTE INFANTILE INTESTINAL INFECTION

ALFRED C. WALLIN, M.D.

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Physician to St. Mary's Hospital, Children O. P. D.
New York

This is a heading covering several ailments which are generally classed and treated separately.

A term used by Dr. Still of London, namely "Infantile Diarrhoea," also covers these ailments better than the above. As the first contains the word infection, it would give the impression that all diarrhoeas under this class were infectious, which I do not believe is the case.

Dr. Kerley maintains that we should treat all cases as though they were infectious. Since the reports of Dr. Flexner and others at the Rockefeller Institute in this city, of the finding of the Shiga's Bacillus, or other forms of bacillus, we are led to believe that a case must contain these germs, or else it is not of this class. But I believe we get many simple diarrhoeas without the presence of these germs.

Acute intestinal infection is one of the commonest and most troublesome of the ailments of childhood and causes the greatest number of deaths during the first year.

We may find these cases in various degrees of sickness, from simple indigestion with simple diorrhea, caused by poor feeding, or poor food; to a severe form of infection, and having symptoms of vomiting, purging and high temperature; prostration; delirium; coma or convulsions and collapse.

Winters says that as high as 88 per cent of cases of fatal diarrhea, were under one year; while Dr. Still of London says in the neighborhood of 50 per cent. Winters maintains that

2 per cent were breast-fed; Still says 4 per cent. We find that a report from London, in spite of improved sanitation and Pasteurized milk, states the death rate has increased rapidly in the past ten years.

We doctors who practice in New York City, especially during the summer months (July and August) have an opportunity to observe this disease closely.

Causes.—It seems to be a summer ailment. However, we find a few scattering cases in the colder months, which makes it plain that the heated season has something to do with the cause of the disease. We are supposed to obtain better quality of milk (more fat) in summer time when the cows are out to grass: not so closely confined indoors and more easily kept clean; yet we have more diarrhea cases in the summer than in winter, which shows that the milk itself cannot be a direct cause. The micro-organism which is thought to be the cause, is not in fresh, wholesome milk. This germ is found in the baby's stool sick with diarrhea. It is occasionally found in a healthy child. Whether or not this inhabits the intestinal canal and by a fermented or chemically changed food of the baby it becomes active and produces our trouble, is a question yet to be settled. It seems to me this is the most likely way the trouble is brought about, for in the summer we have better quality milk than in winter; we have babies fed on artificial food the same in winter as in summer, and yet we get the diarrhea cases, but seldom in winter. In other words, we have babies fed by the same trained doctors, same methods in the summer as in the winter, and yet in the winter but little appearance of this trouble. Of course there are many other causes which could have some influence such as one mentioned by Dr. Still, viz.: condensed milk feeding or any food which tends to lessen the child's vitality.

One very interesting point which Dr. Still shows is that while a child for the first three months naturally would have a death rate larger than during the latter months, it is not so, and he attributes it to the fact that a large proportion of babies are nursed for at least three months; showing that artificial feeding is a causative factor. Why should we pay so much attention to the method, as the method does not seem to cause us much trouble in winter? Why not attend to care of milk and child? Therefore, it seems to me we have the same conditions to meet in the winter as in the summer, with the exception of the atmospheric temperature, and a few conditions caused by the intense heat.

It simmers down to these conditions, effect of temperature on the milk; effect of this same temperature on the child's digestion and general vitality; and the surrounding sanitary conditions.

I quite agree with Winters that if the milk were immediately cooled to 40 degrees and kept there we would have very much less diarrhoea.

In my experience, feeding too often, too much, too strong food, or the wrong kind of food, seems to enter into the cause of the ailment in a great many of my cases.

Pasteurizing milk destroys certain germs, but leavs their spores which develop into germs and produce toxins which make the milk just as dangerous as before. Dr. Still states that pasteurization did not have any effect to lessen the disease or the mortality therefrom in London.

Some authorities are inclined to think that this disease is infectious. I do not remember having more than one case in the same family at the same time. It seems to me strange that the Board of Health is so determined on heating the milk to 165 degrees, which does not seem to prevent the disease, and in my belief, it is useless to mention boiling or sterilization, when cooling prevents all bacteria growth.

Again, as we find a few cases in breast-fed infants, it must be due to a change in the child's system, especially where germs are found in stools. Of course the atmospheric effect on both infant and mother may be a factor. I do not believe that the infant inhales the germs.

Symptoms which I have observed in most of my cases, are as follows: Sudden onset, colicky pain, temperature varying from 101 degrees to 106 degrees, vomiting, increased number of stools, loose, watery stools; slimy, greenish yellow stools; bad cases contain mucous, pungent or foul odor, often white curds, pinched and drawn face, restlessness, fretfulness, loss of appetite.

Infection.—In bad cases, prostration, coated tongue, loss of weight, may have soft and rapid pulse, may have convulsion, may have tenesmus, delirium, coma, collapse, in very severe cases.

I recall seeing three cases last summer which seemed to be so thoroughly poisoned that they went at once into a fatal collapse, and died in a few hours. I was called to one at three in the afternoon, which died before nine at night. In my experience very few of the fatal cases ever live to develop bloody diarrhea. In most of the fatal cases they seem to die from the poisoning before the disease affects the intestinal canal to the extent of causing bloody diarrhea.

Complications.—Thrush in the mouth is often found in prolonged cases; as you know it is also found in malnutrition and may be accompanied by stomatitis in severe cases; and in these cases may be the means of preventing the child from taking its food and thereby causing a great deal of trouble.

Dr. Winters says that one-half the cases of mortality after the first week, die of broncho-pneumonia. I have seen a number of cases of the latter which seemed to me started with bronchitis: but I think the greater number of cases which have come under my observation have died from toxic poisoning.

Another common complication in my cases has been otitis media—a condition which I believe is not sufficiently considered in connection with this disease, and which occurs much oftener than I previously supposed. In many cases it may be the cause of much of the fever and pain, many times thought to be colic, and in some cases producing head retraction; and probably frequently confused with meningitis. In grave cases it may help to cause convulsions. Sometimes we may get a kidney lesion, of which I remember having seen but one case, and that was a case of Dr. de Victoria's.

Prognosis.—Is generally thought to be good if taken hold of before there is too much toxemia.

In these cases one immediately commences to clear out the poison and to prevent the source of infection, and with the facilities, milk stations, clinics and hospitals, doctors and nurses of today, we are making a good fight. Yet a report from London shows that the death rate there has increased 4 per cent or more from this disease in the past ten years.

Treatment.—Immediately cut off all food, and give water as an eliminative (the water diet is kept up for 24 to 36 hours with no food whatsoever), administer doses of castor oil in sufficient quantities to produce an ample movement three to five times within twenty-four hours, according to age. Under six months I give a teaspoon at night and one in the morning. Or if quick action is required, immediately give a teaspoonful and may give another in two or three hours, according to results. Many mothers seem to have trouble in getting this castor oil down the children, and I find in most cases it is because they try to give it warm, when it is of course very disagreeable. But if given clear, ice cold, and placed well back on the tongue, there is seldom any trouble. Care must be taken not to frighten the child. If the oil is vomited, two or three hours should elapse before repeating, giving the stomach a chance to be cleaned out. In the meantime give the child a quantity of cold water sufficient to wash out well. In a few cases where child cannot keep down oil, I use sodium sulphate, simple elixir, each one ounce; aqua to make 4 ounces; sig. 2 teaspoonsful every 30 minutes for 4 doses, as per Kerley.

I also like Dr. Still's method of giving small doses of castor oil, that is, 3 to 5 drops three or four times daily, as it has a healing and a constipating effect. In case there is continued vomiting, I give hot water in doses of one teaspoonful every few minutes, until vomiting ceases. Provided hot water does not stop vomiting, have the stomach washed out. Brandy is used in case of vomiting, and to stimulate secretions, but must be given in very small doses, 5 drops in water every hour or two. For the past two years I have used it less often than formerly, with quite as good results.

In a few cases where the child cannot retain very minute amount of water, give rectal injection of salt solution, drachm to a pint, 3 or 4 ounces to a child under three months. Of course, with the frequent movement of the bowels, this may not be retained long, and may be repeated and lower temperature, and of course some will be absorbed. Where there is high fever, restlessness, delirium and possible convulsions, cold sponges and ice on the head are effective. Where there is low temperature, use hot mustard bath.

For convulsions, have given morphine hypodermically, gr. 1-100, or apomorphine 1-200 gr.

In some cases of high fever and bowels not moving well, I give enema of plain water or with castile soap suds at a temperature a little below body heat—say 90 degrees to 95 degrees—which tends to hasten the eliminative process by clearing out the lower bowel and hastening the action of the castor oil, and lowering the temperature somewhat. Low irrigation is preferable to high. High irrigation causes distention and exhausts the child.

A point often forgotten in these cases is to keep the child at perfect rest. Many mothers lift the child up and move it about and thereby aggravate all the symptoms. The child should have plenty of fresh air. In many cases this may be obtained better by opening the windows well than by carrying the child up and down stairs and out in the heat and dust.

In case of pain, restlessness and fretfulness, give Dovers powders, 1-8 gr. to child of 3 months; 1-4 gr. to child of 6 months; 1-2 gr. to child of one year, every six hours. But never give opium in any form unless there are at least four movements of the bowels a day. In some cases we will be in need of a stimulant. Formerly I have used strychnine—latterly I am using strophanthus, a favorite of Dr. Kerley's. This may be given 1 drop of strophanthus in 20 drops of brandy. hypodermically, or, as I give it most frequently, 1 drop of tincture strophanthus in a teaspoonful of water every 2 or 3 hours, increased in quantity according to age of child. In a few cases that come to us, which already seem to have had a good cleaning out, I give calomel, 1-10 gr. every half-hour for ten doses as an intestinal antiseptic. I also give bis. sub-nitrate 5 or 10 grs. every two or three hours as a prevention to growth of the germs.

The infection causes a disturbance in the secretion of the stomach and intestines. Some authorities in the early stages give rhubarb to stimulate the secretions. But in only a few cases have I found it necessary to give anything, and calomel generally gives the desired result. This, together with trying to make the child as comfortable as possible, and instructing the mother as to the cleanliness of the child, and herself, and in preparing the child's food, and care of bottles, nipples, her own hands, etc., constitute the main points to be considered during the first twenty-four hours for a child under six months.

In continuing the treatment the second day, I must emphasize the fact that we must not proceed with milk, whether it be the contaminated milk, sterilized milk or breast milk, for the reason that it makes good food for the germs that may still remain in the child's system after the treatment we have already indicated.

Now having stopped all the child's food, it becomes necessary to turn our attention to what we will feed the child. In looking over my last summer's reports, I find that in most of my cases, which numbered about 179, I gave barley water for second day's food made in this way:

Robinson's Prepared Barley: One tablespoonful in one pint of water boiled 30 minutes, at the end of which time enough water should be added to still have a pint.

This I gave diluted by one-half with boiled water, in less quantities and at less frequent intervals than a child is generally fed. Dr. Kerley in one of his last papers mentions the fact that he is giving the barley dextrinized in this way: Add two even tablespoonsful of barley or wheat flour to one pint of water. This is to be boiled twenty minutes and strained boiled water being added to make the quantity one pint. When the mixture has cooled to the temperature of 100 degrees F., add one teaspoonful of Cereo, which is a preparation of diastase made for this purpose. This makes a food 3-10 of 1 per cent proteids, 7-100 of 1 per cent fat and 2 per cent carbohydrates. Now, as you easily see, this is a food proportionately small in fats. In feeding the cereal waters, we may season them with different animal broths, simply to change the taste. This food is maintained for two days, or in more extreme cases a week or longer. Also give the child water to drink between feedings. I prefer unboiled, filtered water. But there is trouble in most tenement families to get it filtered properly. Therefore, where we cannot get it filtered, we order it boiled. Continue the Bismuth, Dovers powders or Strophanthus as the case may need. Irrigation only to be used when bowels fail to act sufficiently. For irrigation, may use normal salt solution or boracic acid (Sol.).

In one case of bloody stools, I recollect using tannic acid, 1 per cent solution.

For the past two years I have discontinued the use of white of egg with brandy which I formerly considered good. I notice that Dr. Kerley has also stopped the use of the same as he found it caused almost as much disturbance as milk.

As the case proceeds beyond the 2nd, 3rd or 4th day, the fever gone, the vomiting stopped, the stools four or less per day, and more nearly normal in character, it becomes our duty to consider the matter of feeding the child more.

For the past year I have used the method of cutting down the fats and carbo-hydrates, and of giving a proteid diet out of proportion to the other constituents. This is done by adding skimmed milk to the cereal water diet already mentioned in cases where the fever has left the child for a day or two. This may be begun by one teaspoonful at each feeding, and increased very slowly, as the case will permit, up to an ounce per feeding. Then it is my custom to change to top milk, commencing with a small quantity. Winters maintains that a child cannot digest vegetable proteid so well as animal proteid. So he takes the top half ounce from two bottles of milk, which makes a 3 per cent proteid and a high percentage of fats out of proportion to the proteids and carbo-hydrates. The recommendation that some doctors make to take so many ounces from the top of two bottles, I believe to be impracticable for the reason that most poor people are lucky to get one bottle. A few cases cannot seem to take fresh cow's milk; and in rare instances I use condensed milk, a teaspoonful to a half-glass (4 oz.) of boiled water. This will give you a proportionately large sugar value, which is a poor food to be continued for any length of time. Dr. Winters says give him a baby fed on condensed milk for any great period of time and he will show you a case of rickets. Have used Fairchild's Peptogenic Milk Powder, which acted very well on one particular case I have in mind, since which time I have used it without as good result.

In a few cases the barley does not seem to agree, keeps up the vomiting, I then change to rice water which agrees better. Possibly if the barley water were dextrinized it might agree but that I cannot say from experience.

In continuing our feeding we must be very careful about giving too large a quantity, as I believe more harm comes from over-feeding than from under-feeding.

We treat the vomiting, loose stools, the infection, fever, etc., in the later stages practically the same as in the first stages. In cases of an easily disturbed stomach it is better to give feedings 2 or 3 drachms every hour or so, than to give larger feedings at greater intervals. A breast fed baby should be nursed less often, and the milk diluted by making the baby take one to two ounces of boiled water just before each nursing. The water may be fed the baby by spoon, or from the bottle. In case of collapse, some use hypo-dermo-clysis, but I have never tried it. It seems to me it might be good treatment. I have given strychnine hypodermically in very small doses. Also hot mustard bath, tablespoonful of mustard to a gallon of water, at a temperature of 100 degrees to 105 degrees F.

Complications I treat as they arise.

For distention of the bowels by gas, with offensive or frothy stools, as if fermenting, I use creosote m. 1 to 4 every four hours given in water. Have also used Salol one to three grains once in four hours, for the same condition.

The wet nurse is to be considered in the feeding of these cases in a few instances, among the well-to-do people.

In looking over my records I find I saw about 179 cases of this disease since last June. About 148 of these were bottle-fed and 31 breast-fed—that is, 17.3 per cent of the cases were breast-fed. But of course a much smaller per cent of the breast-fed cases die than those fed by bottle.

Forty-five of these cases were under 6 months; 94 under 1 year, making 52 1-2 per cent of the cases under 1 year and 85 cases over a year old.

As nearly as I could keep track, 26 of these cases died, that is a percentage of 14 1-2. But I think probably this number is small because of the inability to follow up all cases, part of them being clinical cases from St. Mary's Hospital and the Polyclinic. About 17 of the 26 were under one year.

The histories show that the diarrhea was caused by condensed milk in 17 instances.

Thirty-six of the 179 suffered from vomiting. Eleven had bloody stools. (Please note the small number of bloody stool cases.)

In conclusion, the poor people being able to get good milk from the milk stations, free, made according to formula to suit the case, it seems to me that if the Board of Health would supply them with proper ice boxes and ice, and teach them to take proper care of their milk, instead of spending so much for high-price summer inspectors and for nurses, better results would be obtained.

There is no disease that we have to change the treatment so much for each case as in the treatment of this ailment. Therefore the doctor should see the case two or three times a day.

As to pasteurization I cannot see that it is of any benefit. The germ that causes the disease does not seem to be in the milk before pasteurization, so I do not see how the process can have any effect upon the germ.

If, as is supposed by some, the germ enters the milk after it leaves the milk station I fail to see why the germ could not infect the pasteurized milk as well as before pasteurization.

Certainly in breast-fed cases there can be no pasteurization.

THE EFFECT OF INCOME ON NURSING CAPACITY AND INFANT GROWTH

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Side by side with a large incidence of infant mortality it is safe to say that there is a proportionately large incidence of infant morbidity and deterioration in physique, and one is almost tempted to believe that what is happening to the surviving is of more importance to the community, if not to the individual parent, than what has happened, or the causes thereof, to the deceased child.

For that reason I make no apology for bringing before a conference on the welfare of infancy the subject of "The Influence of Income on Nursing Capacity and Infant Growth."

My purpose is to show, first, that the majority of infants in a laboring class district of a large city are underfed and undersized; and, secondly, that this underfeeding is largely due to the case of breast-fed children, who form the large majority, to the poverty and underfeeding of the nursing mothers, and the consequent deficiency in amount and poorness in quality of the milk supplied by such mothers. As some of the figures which I shall first show you are the result of my own investigations in a very poor ward (St. Bartholomew's) of the City of Birmingham, and as I believe that these figures are typical of what would be found in similar districts elsewhere, let me first explain the conditions under which the inquiries were made and the figures obtained. The inquiry relates to 1,712 infants and the families to which they belong; I believe, therefore, that the weights are taken from a sufficient number to give a reliable and stable mean, but it must be borne in mind that that mean is the mean of a very poor population in a district largely inhabited by casual laborers, hawkers, and the like. The figures relating to the family incomes, too, are subject to a certain amount of reservation; the inquiries have been made from the mothers, who, besides some natural reluctance to state the full amounts of their husbands' earnings, even when they really know them, are proverbially inaccurate when asked to make definite statements. On the other hand, the close correspondence which the figures, year by year, have borne to each other, has been very striking, and shows that they are substantially accurate.

In grouping the families according to financial position the well-known standard of Mr. Seebohm B. Rowntree has been adopted, viz.: 12s. per week, exclusive of rent, for a man, wife and one child, and 2s. 10d. per week for every additional child. Those families with incomes below this scale have been placed in Group A, and those with incomes above this scale in Group B. Moreover, Group A, being by far the larger, was further subdivided into: A1, families with 2s. 6d. or more per person per week, after rent was paid; and A2, families with less than 2s. 6d. per person. The numbers in each of these groups were as follows: A2, 641 (41 per cent); A1, 431 (27.5 per cent); and B, 493 (31.5 per cent); total, 1,565.

Infant Growth.—As a result of these inquiries I was able to construct a chart which I now submit.

Incidentally this chart shows the advantage of breast feeding over mixed or purely artificial feeding, but the point to which I would draw your attention is the fact that from the fifth month onward the average child attending the consultation is below the standard weight (the standard adopted being that of Sir George Newman in his book on "Infant Mortality"); this deficiency applying even to the breast-fed children, who at 12 months of age are nearly 2 lb. below the normal mean. To what are we to ascribe this lack of normal growth? I by no means ignore the bad management of many mothers in such localities, or the evil environment into which so many of these children are born, nevertheless I am convinced that much of the deficiency can fairly be set down to a condition of financial stress under which the mother is living "without the necessaries for physical efficiency."

The next chart takes us a step further. Here we see the infants divided into three groups according to the degree of poverty, and you will note how, at every age, the weight of the financially-superior child is greater than his more poverty-stricken fellow.

Below are two tables worked out in greater detail as to income. Necessarily, the numbers in each group are not so large and the averages not so regular. Nevertheless, the tendency of the figures is to strikingly confirm those of Chart II.

Table I.—Showing the average weights at one year of infants grouped according to the income of individual members of the family after rent is paid.

Average weekly income up to	1s. lb. oz.	2s. lb. oz.	3s. lb. oz.	4s lb. oz.	5s. lb. oz.	over 5s. lb. oz.
Entirely breast-fed to six months....	17 13	18 0	18 13	18 7	18 12½	20 2½
Not entirely breast-fed to six months.	15 11	16 6	15 14	16 6½	17 3	17 9
All cases irrespective of feeding..	17 2	17 4	17 11	17 12	18 0	18 4½

Table II.—Showing percentages of breast-fed infants up to standard weight (Newman) in groups arranged as in Table I.

Income up to	1s.	2s	3s.	4s	5s.	over 5s.
At 6 months	53.5	46.5	58.2	54.2	60.6	61.7
At 1 year...........	29.4	21.4	34.8	20.7	42.1	46.1

The effect of income on the weight of the child, whether breast-fed or artificially-fed can, I think, be clearly seen in the foregoing tables and charts. But the results are much more consistent throughout in the case of breast-fed children, and this is still more clearly shown by the chart on next page.

Here we see that the breast-fed child not in poverty, throughout the whole of his infancy is a bigger, better developed child than his fellow in poorer circumstances.

These points have also been demonstrated by Dr. Jessie Duncan in her Reports to the Birmingham Health Committee on Infant Mortality in 1909, 1910 and 1911. By Dr. Robertson's permission I produce two very interesting tables from the 1910 and 1911 Reports. The first shows the percentages of children in good health at the end of twelve months under varying conditions of feeding, employment of mothers, poverty, etc.

	Father's wages less than £1			Father's wages £1 or more		
Average Weight	Good 19 lb. 12 oz. Per cent.	Fair 16 lb. 12 oz. Per cent.	Puny 13 lb. 12 oz Per cent.	Good 19 lb. 12 oz. Per cent.	Fair 16 lb. 12 oz. Per cent.	Puny 13 lb 12 oz. Per cent.
A						
Factory	53	31	16	66	26	8
Home or elsewhere	42	38	20	74	23	3
Total employed...	49	35	16	69	25	6
Not employed....	56	32	12	74	20	6
Total.........	51	33	16	72	22	6
B						
Breast-fed	59	29	12	79	18	3
Partly artificial..	43	35	22	56	31	13
Entirely artificial	33	67	—	61	30	9
Total........	51	33	16	72	22	6

"It is seen from Table III. A that the poverty in the home has a marked influence on the health of the children who survived the first year; the percentage in good health being 72 per cent in the homes where the father's wages were over 20s. per week, and 51 per cent where the earnings were less than 20s. per week. In the poor homes the percentage of children in good health was slightly higher where the mother was not employed, and the same is seen in the better-class homes.

"It is frequently stated that if the child is breast-fed it does not matter whether the home is poor or not—breast-feeding being all that is necessary for the good health of the child (Table III. B). From the above figures it is quite apparent that other factors are at work besides the feeding. Amongst the breast-fed children in the good homes, 79 per cent were in good health at the end of the first year, and in the poor homes only 59 per cent were in good health."

The other table shows the weight at twelve months of the infants divided into two groups according to the earnings of the father.

TABLE IV.

	Father out of work or earning less than £1		Father earning £1 or more	
	1910	1909	1910	1909
Mother employed in a factory	17¾	17½	18½	18¼
Employed at home or elsewhere	17½	17¾	18¾	18¼
Employed	17¾	17½	18½	18¼
Not employed	18	17½	19	18½

Commenting on these figures Dr. Duncan says:

"It will be seen that in the homes where acute poverty exists there is a marked falling off in the average weight of the baby, whether the mother is industrially employed or not. The influence of poverty is still more strikingly seen in the following statement:

Average Weight at Twelve Months Old.

Illegitimate children	17¼	lb
Father out of work	17¾	"
Father's wages under 15 s.	17¾	"
Father's wages between 15 s. and 25 s.	18	"
Father's wages 25 s. or more	19	"

"The general conclusions to be drawn from another year's study of this question are much the same as those arrived at in 1908. It seems pretty certain that industrial employment has a bad effect on the infantile mortality, principally because it interferes with breast-feeding. For this reason employment in a factory is more harmful than employment at home. But the influence of industrial employment is quite small when compared with the influence of acute poverty. It would seem therefore that in so far as the mother's employment reduces the acuteness of the poverty, it may even tend to improve the infant mortality. At any rate it is doubtful whether any further interference with the employment of married women would be at all beneficial as long as the acute poverty remains."

If the effects of poverty are so marked as to mask the evils incident to the factory labor of women, and even to suggest that such factory labor may be, at times, beneficial, they must be powerful indeed.

By permission of Dr. Robertson I reproduce three charts, which illustrate graphically: IV. and V., the comparative influences of the industrial employment of the mothers and of poverty on infant mortality and infant health respectively; and, VI., the fact that even the great value of breast-feeding does not counteract the effects of great poverty.

It will be seen (Chart IV.) that employment of the mother apparently had the effect of causing a difference of 10 per 1,000 in the infant mortality, whereas the father's earnings being under or over £1 per week resulted in a difference of 65 per 1,000.

Chart No. V. brings out the same facts in relation to the health of the child.

Chart VI. shows that notwithstanding the enormous value of breast-feeding it cannot counteract the influences associated with great poverty. Thus the breast-fed infants in poor houses died at the rate of 112 per 1,000, against only 69 per 1,000 in better-class houses, an excess of 62 per cent, apparently due to poverty. Among the bottle-fed babies in the poorest homes the rate was 194 against 125 in the better homes, an excess of 55 per cent, so that the excess of mortality occasioned by poverty was even greater among the breast-fed than among the hand-fed.

Nursing Capacity.—The foregoing figures relating to breast-fed children afford pretty conclusive evidence that a poverty-stricken and therefore underfed nursing mother implies also an underfed child of stunted and defective growth, and the natural assumption would be that this deficient growth is due to some modification in the quantity or quality, or both, of the woman's milk. Are we possessed of any data tending to prove this assumption? I believe we are, and I would draw your attention to evidence derived from certain observations on the quantity as shown by means of test meals; on the quality as shown by analyses of milk under varying conditions; and to facts brought out by the feeding, experimental or otherwise of nursing mothers.

In considering this problem the first question I put to myself was: Is there any reason to suppose that the pressure of poverty causes any real abrogation or, at least, diminution of breast-feeding? Curiously enough, during my first two or three years' consulation work the figures seemed to answer this question in the affirmative; but as time went on and the numbers increased, the proportion became reversed, and I was obliged to modify my first impression.

The following tables show the result of the inquiry:

TABLE V.—Designed to show the effects of poverty on the function of Lactation.

Group A (in poverty)	*Breast-feeders	508, 65	per cent.
	*Mixed or bottle-feeders	271, 35	per cent.
Group B (not in poverty)	*Breast-feeders	235, 60.4	per cent.
	*Mixed or bottle-feeders	154, 39.6	per cent.

*At the time of first registering the infant at the consultation.

TABLE VI.—Showing the method of feeding infants in various groups based on financial position.

	At 3 weeks Per cent.	13 weeks Per cent.	26 weeks Per cent.	39 weeks Per cent
In poverty, lower grade				
Breast-fed	89.74	80.2	74.4	67
Breast and bottle	7.18	15	14.7	19.15
Bottle	3.08	4.8	10.9	13.83
In poverty, higher grade				
Breast-fed	98.2	79.8	63.8	52.77
Breast and bottle	—	9.6	9.6	13.9
Bottle	1.8	10.5	26.6	33.3
Not in poverty				
Breast-fed	89.1	70.7	64.5	58
Breast and bottle	5.4	12	9.7	15
Bottle	5.4	17.2	25.8	27

Table V. includes all infants attending the consultation. Table VI. is composed of infants living in the vicinity of the consultation only, all those not being breast-fed from any obvious cause such as factory work of the mother, illness and the like, being eliminated.

So far as the inquiry has gone, therefore, it tends to prove that breast-feeding is more common at all periods amongst the women suffering from poverty than in those slightly better circumstanced. The explanation no doubt is that breast-feeding is so much the cheaper method of nourishing the infant, and any further investigation on these lines would probably lead to no different result If, therefore, we have to conclude that breast-feeding is more common as we descend in the financial scale, or perhaps it would be more correct to say, if we have to conclude that the greater the financial stress the more it is found to mask a probable deficiency in the capacity for suckling, are there any other grounds for believing that poverty does actually modify the quantity of milk supplied?

Let me draw your attention to a table showing the weight of average "test feeds" of infants as found by various observers. Some of these figures are derived from a paper on the "Food Requirements of Infants," by Dr. Pritchard, others are the result of independent inquiries in Birmingham and elsewhere.

The figures relating to "slum infants" in London are founded on an extensive series of test meals carried out by Dr. Pritchard at his consultation at Marylebone Dispensary, and at the Queen's Hospital for Children, and by Dr. Ronald Carter at the Kensington Consultation. Commenting on them Dr. Pritchard says: "Making allowance for all sources of error, I find that the average consumption of breast-milk by the slum infant is about 33 per cent less than the estimates given by German observers for institute infants, or than the estimates I have myself made in the case of infants in well-to-do families."

The Birmingham calculations are the result of observations by Dr. Jessie Duncan at the Municipal Consultation; by myself at the Consultation of the Birmingham Infants' Health Society; and on Dr. Smallwood Savage's cases at the Maternity Hospital, by whose permission I was enabled to collate and analyze the figures. The women at the Maternity Hospital were, of course, all well and properly fed. Dr. Duncan's cases were very poor, but were being supplied with one good meal a day; my cases were of the poorest type, and the babies were nearly all unsatisfactory as to growth, but otherwise healthy

A careful examination of this table will, I believe, tend to show that, on the whole, there is a decided difference in the amount of milk supplied to the private or institutional infant and the amount afforded to the consultation or slum child. And it will further be noted how very closely the average weekly gain in weight of the child depends on the amount of milk supplied by the mother. On this matter it is unsafe to dogmatize: several observers have pointed out the extraordinary variations in quantity from day to day, and even on the same day, from the same woman, these variations being apparently quite unaccountable; moreover, Dr. Pritchard has expressed the opinion that the smaller amount of milk taken by the slum child is largely the result of its own lessened demands, nevertheless, I venture to submit that, to some extent, at any rate, this lessened supply is the measure rather of the mother's capacity than of the child's needs.

And if the quantity is probably restricted under conditions of poverty, what of the quality? Observations on the solid content of human milk under varying conditions of poverty have recently been made in Birmingham by Dr. Jessie Duncan, of the Public Health Department, and by Dr. Elgood Turner. Dr. Duncan analyzed 136 samples from fifteen mothers, and writes as follows:

"All the samples of milk were taken from women who were in a more or less poverty-stricken condition, and who were receiving one substantial meal during five days a week

"The milks do not represent, therefore, average samples, but rather an average of samples from underfed women.

"While the mothers were being fed the percentage of fat in nearly all cases increased, and it diminished when the meals were discontinued.

"The mothers themselves gained weight and improved very much in health and appearance during the time.

"I have paid many unexpected visits to their homes, and have found that many of the women were only having tea and bread-and-lard for breakfast and supper. In same cases the diet was even poorer.

"While the mothers were having the meals the baby's weight-curve also improved coincidently with the increase in the fat of the milk.

"In ten out of the fifteen cases the weight-curve fell away from the normal line when the meals were stopped.

"A practical point of importance from these investigations is that the percentage of fat of the milk is of the greatest value to the child.

"It is to be noted also that the fat is the only constituent of the milk which is influenced to any appreciable extent by an increase in the diet of the mother."

Dr. Elgood Turner formed exactly the same conclusions as the result of her experiments, and, with her permission, I reproduce some very interesting and striking charts published in the British Medical Journal of October 15, 1910. You will note how in Charts VII. and X. the weight of the child follows very closely the differences in the percentages of cream. In the case of Chart VIII poverty overtook the mother when the baby was just over three months old and the mother went out to work; note how the cream content dropped at this period.

Note in Charts VII. and VIII. how slight are the variations in the milk while the weight of the infant is normal. In the latter part of Chart VIII., and in the following two Charts, IX. and X., while the rate of increase of weight is below the normal healthy rate, the content of fat and solids not fat both show greater fluctations.

Lastly, we have the evidence derived from experimental or other feeding of nursing mothers. I have already quoted Dr. Duncan's conclusions after a series of tests of milk derived from women who were being given one good meal a day at her consultation. Here are three charts from Dr. Elgood Turner's paper showing the effects of feeding the mothers on the cream content of the milk and on the weight-curve of the infant.

In each of these cases the mother was given for a stated period two full meals a day and the effect is seen on (a) the weight-curve of the infants, (b) the quality of the breast-milk with regard to the fat percentage. Note particularly how the weight-curve rises with the provision of meals and becomes flattened on their cessation.

And these scientific investigations are not without confirmation from other sources. For twelve months the mothers attending the kitchen of a Nursing Mothers' Dinner Society in Birmingham were carefully watched, and the results of the feeding on the weight-curve of their infants noted. The society was financed by a well-known Birmingham citizen on the understanding that it was carried out as a scientific experiment and at his request I drew up the following report for his information:

"In the families from which the mothers attending the dinners were derived the average weekly income per person less rent was 1s. 8d. It will be seen, therefore, that all the women were in very poor circumstances. The weekly gain in weight of the infants over a combined total of 588 weeks was

3.5 oz., as compared with 3.224 oz., the weekly gain of somewhat similarly circumstanced infants whose mothers were not being given dinners. In many cases the weekly gain before the dinners were supplied was known. In these cases the gain beforehand was 3.49 oz. per week (243 weeks), and during the supply of dinners 3.56 oz (396 weeks). The most striking results, however, were seen in the cases of those infants who were doing very badly before the provision of dinners. In these cases (23 in number) the weekly gain beforehand averaged 2.136 oz. (147 weeks), and during the dinners 3.295 oz. (268 weeks), or an increase of over 1 oz. pr week. Though the numbers are small the results, in all cases, tally too strikingly to be ignored."

In conclusion, let me reiterate that in drawing your attention to certain results on the mother and child of lack of sufficient pecuniary means I in no wise ignore other factors in the problem, such as ignorance, carelessness, environment, etc., questions which have been frequently discussed at previous conferences. In the facts, however, which I have had the honor of laying before you, I believe we have evidence of the effects of deficient income, per se, as distinct from the effects of the concomitants or results of deficient income above mentioned.

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TABLE VII.—Showing (1) The Average Weight of Breast-milk consumed at single feeds at various ages according to different observers, and (2) the Average Gain of the Infants at same periods (Weights of Milk and Gain of Infants given in Ounces).

Age			Week				Months										
			1st	2nd	3rd	4th	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th
Slum infants in London	Marylebone Consultation, 1906-11	(1) Test feed		1.87	1.62	1.95		2.04	2.26	2.23	3.0	2.81	3.08	2.67			
		(2) Weekly increase		8.36	5.75	4.57		4.77	4.15	4.25	4.87	3.68	4.0	1.0			
	Marylebone Consultation, 1911-13	(1) Test feed					1.94	2.50	2.75	2.37	3.37	3.37	2.56	2.50			
	Kensington Consultation	(1) Test feed			1.75	1.85		1.8	2.0	2.15	2.5	2.67	2.72	2.9	3.0		
		(2) Weekly increase			5.0	4.5		4.5	4.0	4.25	4.0	3.4	3.0	3.0			
	Queen's Hospital for Children	(1) Test feed			1.0	1.47		2.0	1.84	1.35	2.18	3.0	2.08				
		(2) Weekly increase				3.59		3.55	2.66	2.51	4.80	5.0					
Slum infants in Birmingham	Municipal Consultation	(1) Test feed					1.79	2.15	2.22	2.33	2.17	2.58	2.62	3.12	3.24		
	Birminghamton Infants' Health Society Consultation	(1) Test feed					2.04	2.0	1.6	1.7	1.8	3.08	2.3	1.7	2.69	2.6	2.39
		(2) Weekly increase					3.3	3.0	4.16	3.7	4.1	3.45	2.75	2.54	2.3	2.0	2.2
Institutional infants or private cases in Germany	Peter's figures	(1) Test feed		2.4	2.7	2.87		5.42									
	Camerer's figures	(1) Test feed		2½	3½	3½		3½	4½	3½							
		(2) Weekly increase		5.0	5.0	9.0		5.0	5.0	7.0	5.0	4.0					
	Beuthner's figures	(1) Test feed		2	2¼	2¾		3¼	4½	4½	5						
		(2) Weekly increase		3.0	4.5	8.0		9.0	5.0	2.0							
	Feer's figures	(1) Test feed		2.5	2.8	3.5		4.0	4.5	4.8	4.8						
		(2) Weekly increase		4.5	6.0	6.5		7.0	4.0	4.0	4.5	0.5	5.0	5.0			
	Hachner's figures	(1) Test feed		2½	2½	3		5¼	5½	5½	7						
Institutional infants or private cases in England	Private cases (Pritchard)	(1) Test feed			3.33		2.44	2.36		3.4							
	Private case (Pritchard)	(1) Test feed						3.08									
	Private case (Forsyth)	(1) Test feed	1.0	2.0	1.75	1.75	1.6	2.42									
		(2) Weekly increase		5.0	3.3	3.3	3.9	5.0									
	Birmingham Maternity Hospital	(1) Test feed	1.1	1.65	2.13												

A roughly estimated average shows:—

Slum Infants Feed.............2.23 oz.	Private or Institutional cases, Feed........4.59 oz.
Slum Infants Weekly gain.......3.8 oz.	Private or Institutional cases, Weekly gain..4.88 oz.

EUGENICS (IN EXTENSO)

DR. U. S. BIRD.
Tampa, Florida

Just now society appears to be in the throes of a eugenic epidemic, rivaling in extent and intensity our more material visitations. About the only real, tangible, practical result from the present agitation is the apparent demonstration that between eugenic aims and methods there is a great gulf fixed. Eugenic aims may be accepted as unimpractable. Its methods in pursuit of such aims are a fearful and wonderful exhibit, which seems to have attracted the attention and stimulated energies of a multitude of apparently well meaning, but certainly ill advised persons. Some of their absurdities pass understanding. ..However, it may do no harm to project the eugenic idea beyond its immediate goal, and consider the safety of the eugenic unit, the living, healthy child, from an arbitrary angle.

Within the last few years my attention was called to a case in which a child two years old was found to be suffering from a chancre. By excluding every other possible means of infection, the nurse maid was finally identified as the responsible agent. It is needless to dwell on the physical and mental suffering attending such a misfortune.

Within the last few weeks a lady consulted me concerning the girl who had the care of her little son, one year old. The girl was said to have a painful and offensive trouble of her nose. She proved to have an extensive and active syphilitic necrosis of the septum, from which a large sequestrum has since been removed.

The problem confronting me was not altogether simple. Professional secrecy should be as binding in the case of the poor and ignorant as in the well to do. However, I realized that the question of the child's safety imposed a certain, definite responsibility on me. My first plan was to explain to the girl the danger in which her attendance on the child placed it. But, as she was a foreigner, speaking little English, while not antagonizing her, I had but indifferent success. Then I warned the mother as strongly as I could, without telling her exactly what was the matter. But the girl's symptoms improved; she was a good servant, and the mother hesitated to dispense with her. It was only after assuming full responsibility, and telling the father plainly the state of affairs that the family acted.

Now, if such a good condition of indifference obtains in a household of average intelligence, having the benefit of early, sympathitic warning, what can be expected, not only in the absence of such advantages, but in a condition of total ignorance of such condition, or suspicion of danger? These cases coming under my observation are surely not exceptions. While I have no statistics at hand, it must be plain to every thinking person that the prevalence of contagious and infectious diseases among household servants must be very general. I am not prepared to advocate the literal application of eugenic principles to this class of our population, nor to suggest that their importance in this connection compares with that assumed for them in the field arbitrarily assigned to them; but, if good there, they should not be without merit here.

A timely warning as to the danger threatening the children from this source may suggest the wisdom of using as much care in the selection of such a servant as in the selection of groceries or meats, with the expectation that the results may be as satisfactory. Incidentally, it would relieve the physician from a responsibility such as I felt constrained to assume. Before engaging such a servant a sensible inquiry should yield information which would easily prevent the assuming of a relationship, the breaking of which, once assumed, may requre the most strenuous methods, as I have set forth; not to mention the danger to the child in the interim.

INDICATIONS AND CONTRA-INDICATIONS FOR REMOVAL OF TONSILS.

BY W. T. McCURRY
Little Rock, Ark

It may be well to divide our surgeons into two classes when we discuss tonsils In first class, we find those who want to get at the bottom of the question regarding the function of the tonsils and base the surgical indications on same theory, while the second, are those who base the indications on the clinical and pathalogic facts, as presented, hoping that soon the function of the faucial tonsil will be settled. It seems to me that the tonsil has some function early in life which is later

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easily overcome, in many cases, by the raids of bacteria on it. The surgeons with extreme theories—those who believe that it has no function and whenever found is abnormal and should be removed—are both wrong.

The function is one of defense against infection. The enlargement becomes pathologic, only, when it injures the system more by its presence than it assists whatever physiologic acts of defense it may perform. Many large tonsils exist throughout life without danger or inconvenience to the individual. Of course, they so frequently reach such size that they injure the patient's health in cutting off proper supply of air.

The crypts are retorts in which the germs are destroyed or modified so that they live in peace with their host or they are allowed to pass through in such numbers as can be dealt with by internal processes without the destruction of their host. The tonsil is a definite organ and in man is the most highly developed of all the lymph-nodes.

I have observed that the submerged tonsil, which may be quite small, is more liable to be doing harm than the fairly large discreet one. The tonsil that is more or less submerged is the one that nearly always is to blame for infection.

The very large discreet tonsil may interfere with proper breathing, the development of the jaw and face; or cause an irritation of the fauces; then it should be reduced. Tonsillotomy will help wonderfully in such cases, but it must be remembered that the remaining portion may reproduce the hypertrophy, or the cicatrices formed over the stump may interfere with crypt drainage and convert remaining portion into a diseased condition that will allow toxine and germs to invade the system, which the whole gland did not permit before. It seems reasonable in such cases there should be a complete removal of the tonsil.

Some of the chief indications which render complete removal advisable:

1. Any interference with respiration, night or day.
2. Threatened alteration of voice or articulation.
3. Eustachian catarrh, or the presence of middle ear affections.
4. Chronic enlargements of the cervical gland.
5. Chronic lacunae tonsillitis; or the cheesy collections in the supratonsillar fossa or between the tonsil and the pillars.
6. If adenoids are present and are to be operated on, the

opportunity of the anaesthetic should be utilized to remove any decided tonsillar hypertrophy.

7. Attacks due to septic absorption through the tonsils or a chronic condition of ill-health which can be attributed to infection through the tonsillar area.

8. Frequent attacks of tonsillar inflammation or of peritonsillar abscess.

In most cases it is the septic state of tonsils, rather than size, which determines the question of removal. Some of the largest tonsils give rise to the least local inflammatory trouble. Again, in regard to the removal of tonsils with adenoids, it is sometimes held that if the latter are cleared away the palatine tonsils will atrophy.

This may be true of small tonsils in children about 12 years of age. If not diseased they may then be left. But in younger children when adenoids only are removed, I have found that the tonsils not only persist but continue to enlarge and give rise to trouble later. There are two important reasons for operations upon the tonsils; the first being to conserve the general health of the patient by removing a manifest source of infection: and the second and scarcely less important one, to conserve and improve the functions of the neighboring respiratory and phonatory organs. Painstaking care should be taken not to sacrifice important structures in our zeal to remove sources of infection. I have seen many children with defective voice and speech from above cause.

Some of the dangers: Statics lymphaticus is an absolute contra-indication (if we could only diagnose this unfortunate condition clinically as it caused more fatalities than any other one thing.)

Hemophilia is also another absolute contra-indication but fortunately it is a rare condition.

Hemorrhage is another trouble we have to contend with.

First: Primary hemorrhage which should be controlled before attempting to remove the second tonsil. We should always be on the lookout for our secondary hemorrhages.

Second: The individual case must be studied in presence of diabetic renal diseases or a non-compensating heart.

In summing up I will say be careful to take pains in examining your patients' throat. You may find pus located between the anterior pillow and the tonsil.

I will now cite a few cases. A few days ago I had a young man 25 years of age referred to me by a doctor friend.

Upon examination I found pus in the location referred to above. He was suffering with rheumatism and has been for several months. He had chronic enlarged tonsils. I removed both of them under local anaesthesia. His rheumatism was relieved at once, and I dare say he will have no more trouble.

Case Two: A young man 27 years old, small submerged tonsils, on casual examination of the throat you could not find much trouble, but on introducing an eustachian catheter I found a quantity of pus pent up between anterior pillow and tonsils. He was given a general anesthetic, and a thorough enucleation of both tonsils was performed, thus relieving the source of infection, and rheumatism disappeared.

In children you will find frequent cases of chronic eustacian catarrh caused from enlarged tonsils, which is relieved by removal of the tonsils. Statistics show there is more danger of hemorrhage from partial removal that from total removal of such tonsils.

I would not remove tonsils where I have any acute trouble of throat causing temperature that could not be accounted for.

Tonsilectomy properly done should not injure the singing or speaking voice though a singer may have to learn to use the muscles again as they are re-adjusted, on the other hand injuries to the pillar velum or uvula during a tonsillectomy may ruin the singing voice and impair the speaking.

This paper is not an attempt to exploit any particular method of dissection or operation. I only wish to say be careful and dextrous. It is a plea for the surgeon to place himself under the most favorable conditions possible for performing the operation, judging by the dangers to be met, difficulties to be overcome and the results to be accomplished. I believe that tonsillectomy is an operation worthy of your very best skill. Let us spare no effort that will contribute to its perfection and no precaution that will add to its safety.

SOCIETY TRANSACTIONS

REPORT OF THE SCIENTIFIC PROCEEDINGS OF THE THIRTY-SECOND ANNUAL CONGRESS OF THE AMERICAN LARYNGOLOGICAL ASSOCIATION

Held in Atlantic City, New Jersey, May 25-27, 1914.

Endonasal Operation in Tumor of the Hypophysis.—Report of a Case in a Female Nine Years of Age.—By T. H. Halstead. M.D., Syracuse. The patient first seen February 6. 1914. The prominent symptoms were adiposity, frontal headache, impairment of sight, tiring very easily, muscular fatigue, marked ataxia, dizziness, intention tremor, extreme difficulty in making co-ordinated movements. Skin dry and coarse, hair black, coarse, growing low on forehead. She was mentally acute, described as being almost brilliant. There was an increased tolerance for sugar, no slycosuria after 200 grammes glucose, slight pyrexia. The eyes showed 6-9 plus each eye, sight occasionally obscured, fields normal for form of each eye, color fields normal. Pupils large, in dark room no reaction to light, but in bright light moderate change. Reaction with convergence normal. Muscle balance normal.

Patient is short, thick set for her age, tendency to adiposity, particularly about hips and abdomen, facial expression flat and ironed out, well marked general ataxia, marked choreiform movements, marked athetosis, decided intention tremor, some deafness but not persistent.

X-ray examination—stereoscope plates — showed sella turcica somewhat larger than normal, bony outlines irregular and not as clear cut margins as other outlines in this area. Above and posterior to sella is a brain area of lessened density, fairly well defined, the anteroposterior diameter one and one-half inches, vertical about one inch. This area seems to surround the sella turcica, the interpretation being a soft growth, possibly a cyst, surrounding and pressing upon the pituitary body. The diagnosis was a cyst either of the hypophysis or a neighborhood cyst pressing upon the hypophysis, the optic thalamus forming the interpenduncular space.

Preliminary operation, March 13, 1914, upright position, cocaine, adrenalin. Removal of both middle turbinates and exentration of right anterior and posterior ethmoidal cells.

Second operation, anesthesia, local, submucous resection of the septum, entire septum, vomer, perpendicular plate of ethmoid and the rostrum of the sphenoid were revomed. Anterior wall of both sphenoid and sphenoidal septum removed.

Nineteen days later third operation, posterior third of the soft, bony septum removed, then the bony sella, the dura incised, and there was an immediate gush of more than half an ounce of yellowish fluid.

During the week following the last operation there was a very marked change in her condition for the worse. Frontal headaches increased, shrieked a great deal, much stupor, dull, apathetic, involuntary urination, polyuria, two tonic convulsions, pulse irregular and thready, respiration at times slow and of Cheyne-Stokes type. At end of a week, following the convulsions, gradual improvement in the ataxia and athenoid movements being first noticeable, pupil contracting, headache less, but there was a decided change for the worse in her disposition. Loss in weight and in strength very perceptible, involuntary micturition and defeaction. This decided change in symptoms, some better, some worse, continued for three weeks, and seemed to be due to the relief of pressure in interpeduncular space, as shown by improved eye conditions, less headache, less ataxia and intention tremor, whereas there was seemingly now a condition of hypopituitarism instead of the hyperpituitarism when she entered the hospital. For four weeks it was notices that her black hair was changing color rapidly to a reddish brown, beginning at the distal end of the hair and extending rapidly to the scalp.

She was now put on pituitary extract—pituitrin—when there began an immediate improvement in her mental condition, the child becoming bright, cheerful, singing happily, displacing the apathy and dullness following the last operation. Muscular strength showed an equal improvement. No complaint of headache. But ten days have elapsed since giving the pituitary extract, and the report of the case, consequently, too short a time to know how much real and permanent improvement may follow the operations.

Discussion

Dr. Lewis A. Coffin, New York City: I have operated two of these cases, practically doing the same operation that Halstead has reported, excepting that I take out the posterior part of the septum instead of doing a submucous resection. I took out the rostrum and got to the sphenoidal wall in that way. They were done in two or three stages. The first case was a woman, an idiot, that was referred to me from a charity hospital, and I operated her in three sittings. She was a poor patient under cocaine, because she had no mentality, but I was successful in getting back as far as the sphenoid. I went into her sella and put her back in the ward. Her symptoms as to pain in the head improved, but her mentality did not. Some ten days after I had done the operation I felt more or less chagrin because I had not any of that tumor in a bottle for examination; it was a cyst, there being a gush of strow-colored fluid. It had become so easy to go into the sella turcica that I thought I would go in with curved forceps and get some of the tumor. I put her on the table under an anesthetic, and took Yankauer's right and left forceps, somewhat curved, and opened the sella turcica, closed my forceps, and took out what I thought was the tumor; there was a small hemorrhage. I backed right into the opening in the sella. I put her back in the ward feeling pretty well. Two hours later the patient was not so well. She was comatose, evidently from brain pressure. I removed the packing, but she died that night. Another case was sent to me from the eye clinic of the Manhattan Hospital, a young girl of seventeen, who had complete blindness in one eye and temporary hemianopsia in the other, with extreme and constant headache. I operated under cocain, removed the posterior half of the septum, opening the sphenoid, and took down the sphenoidal septum under cocain. I then, instead of inserting a plate, took her up to the X-ray room, and took a periosteal elevator and slipped it into the sphenoid, and without any light whatever, and put a little adhesive plaster around it to hold it under the X-ray, and found the beriosteal elevator was exactly where I wanter to enter the sella turcica; I then put her back on the table, opened the sella, could see the tumor very well indeed, but could not get any tissue. It seemed to break down, and I was not so ambitious to get any of it in a bottle as I had been before. However, just as she went back to the ward I took a curette and slipped it in there and put her back in the X-ray room and X-rayed her under ether, which showed my curette in the middle of the pituitary gland. That girl improved very much, not in vision, but her headaches disappeared. The interesting part is when she had gone out of my hands. She was coming to me for probably three or four or six weeks; she felt very much better; Dr. Sharp, who is consulting neurologist to our hospital, who worked for anumber of years with Dr. Cushing, said we were not warranted in doing anything further for her. I was oloking for a case where I could do the Frazier operation, but this was not justified in this unless her headaches returned. Her sister, however, wanted her vision improved, and took her to several other men. Dr. Elsberg, Dr. Charles A. Dana, etc., saw her in the course of time. I asked Elsberg if he ever operated her to notify me, and some two weeks later he sent me word he was going to do the Frazier operation. I was delighted with his wonderful and beautiful technic. He did not, however, remove more than the size of a grain of rice. I do not know her recent history.

Dr. Cornelius G. Coakley, New York City: I saw one case operated on of a man who was totally blind in the left eye, with hemianopsia on the opposite side. Elsberg did the operation, a decompression, but a decompression above the optic nerves. If you are going in for decompression you have your growth below the optic nerve, and pushing the nerves upward, and here semiclassical decompression is of far more value than decompressing the lower portion of the floor of the frontal lobe. The Frazier operation is not so satisfactory as the Hirsch or Cushing, or as the regular decompression operation.

Dr. Harry L. Swain, New Haven: I, too, have seen an operation and assisted at one for pituitary tumor in the hands of a general surgeon. What impressed me was the smallness of the view of the tumor mass. The operation was done skillfully enough; the nose was taken off at the face and turned up to the forehead and fastened with towels, and the septum taken away, set back, the sphenoid opened, and the septum between the two sphenoidal sinuses taken away, and a good operative field cleared up. When all is considered, the range of light in surgical amphitheatres is not enough for a clear view of the further wall of the sphenoid to enable one to open into the sella turcica. The first stroke of the chisel opened into the sella turcica, and enough was chopped out to enable us to look through at the cranial cavity; there was a growth.

not a cyst. of organized tussue. and it was supposed to be a glioma. although this would be very rare in this situation. There was immediate improvement in vision after the operation. but on the night of the second day she developed a combination of edema of the brain and pressure from that. with rise of temperature. edema of the lung, and cessation of the kidney function, and died. During the first twenty-four hours, while still in possession of her faculties, there was a marked improvement in vision os a result of simple decompression, because I doubt if the mass of tumor taken away in itself was sufficient to have relieved the pressure enough to improve the symptoms.

Dr. Thomas E. Halstead, Syracuse (in closing): In answer to Dr. Coffin's question, I think the field was better after taking off of the posterior end of the septum, and in fact, I first started to do what he had done, not the submucous resection, but I got cold feet. I knew what Hirsch had done, and thought I would stick to that operation. I am sure that the field which I got the third time, when I took out the posterior end of the septum, was better than at the second operation.

I do not know regarding the comparative possibility of sepsis. This child that we thought was going to die after the second operation, developed a tonsillitis with a temperature of 103 degrees, and finally pulled through.

RETROSPECT OF CURRENT PEDIATRIC LITERATURE

Diseases of the Alimentary System.

Under the Charge of

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Treatment of Summer Diarrheas of Children.—F. M. Crandall states in N. Y. Med. Jour that four general measures of treatment are indicated—mechanical dietic, hygienic, and medical. At the outset measures are usually indicated to clear the digestive tract of fermenting material. Stomach washing is rarely necessary, but should be resorted to if the child continues to vomit cudrs or food or sour and putrefying matter. Prompt unloading of the lower bowell by means of irrigation is very important. High irrigations are valuable until convalescence is thoroughly established. At the outset of an acute diarrhea all food should be prohibited, but water should be given freely unless it induces vomiting. Milk should be resumed with great caution and sometimes must be long withheld. As a rule a laxative at the outset is strongly indicated. Castor oil is usually the one to be selected. A saline may fulfil the requirements very well. When the stomach is irritable calomel in small divided doses is frequently the laxative to be chosen. The type of disease should influence largely the laxative to be chosen. In the last half of June and the first half of July the prevailing type is the serous diarrhea, marked by large watery passages, ranging from a few up to twenty or thirty a day. During the following six weeks these serous cases are comparatively rare and true enterocolitis is more common. This means that the acute cases of the earlier summer have settled down to a true organic or inflammatory disease. During August the passages are of the thicker and more grumous type. New cases are much less frequent than in the earlies summer. In the late summer and early fall colitis appears, and the passages are of the so-called dysenteric type. They consist largely of mucus and blood and are accompanied by tenesmus and high fever. With cases of the serous type, with twenty or thirty large movements a day, it is often a question whether it is wise to administer a laxative. When mucous and blood appear in the stools, castor oil should be given and persisted in even at the expense of some nausea and vomiting. Astringents, so much used in the past, are irrational and ineffective. Bismuth either alone or with some simple adjuvant, is today the most commonly used drug in summer diarrhea. Opium is contraindicated in the first stages of acute diarrhea, before the intestinal canal has been freed from decomposing matter; when the passages are infrequent or of bad odor; when there is a high temperature or cerebral symptoms are present, and when its use is followed by increase of temperature or the passages became more offensive. It is indicated when the passages are very frequent with pain; when the passages are excessivly frequent, large, and watery; in dysenteric diarrhea, in which case it should be proceeded by castor oil or a saline; in late stages with small frequent, nagging passages, and when the passages consist largely of undiested food, and the bowels act soon after the food is taken into the stomach.—New York Med. Record.

Thymol as a Teniafuge.—Guillon, in Presse medicale for August

2, 1913., is credited with the statement that thymol will yield 100 per cent. of successful results in the treatment of tapeworm, and, provided a certain procedure in its administration is followed, it can be substituted with full confidence and even advantage for the teniafuge agents in ordinary use. In the hospitals of Indo-China, where thymol is used extensively, the method employed is as follows: The evening meal on the day before the treatment consists of milk. Next morning, three cascrets of thymol (each containing 15 grains or one gram for male adults 12 grains or 0.75 gram for women, and correspondingly smaller amounts for children) are taken at hourly intervals, followed, three quarters of an hour after the last cachet, by a saline purgative (one to 1.66 ounce or 30 to 50 grams of sodium sulphate). Alcoholic preparations and oils, including castor oil, are to be strictly avoided at this time. As with other teniafuge agents, the patient should not go to stool until a distinct need is felt. Generally the effects of the treatment are complete two hours after he ingesion of the purgative, and in the afternoon of the same day the patient may take a light meal consisting of milk and eggs, with the ordinary supper in the evening. The only unpleasant effect is occasionally a momentary slight sensation of burning in the epigastrium just after the ingestion of thymol. The efficacy of the treatment was illustrated in the case of a neurotic woman who vomited both the second and third thymol capsules as well as the purgative salt; in spite of the fact that only one capsule had remained in the alimentary tract, the parasite in its entirety was expelled the following night. In another case, four tenias were passed at once, and several months later recovery was still maintained. Guillon holds thymol to be the most reliable, the least dangerous when suitably administered, and the least expensive of all teniafuge remedies.

Typhoid and Paratyphoid Vaccination with Live Attenuated Vaccines: Mixed Vaccines.—By Aldo Castellani, M.D. Conclusions—1. The use of live attenuated vaccine prepared according to the method introduced by me in 1904 and published in 1909 (Centralblatt fur Bakteriologie) is harmless. In preparing the vaccine the strain used should be non-virulent but rich in antigen, as found out by animal experiments. 2. Such vaccine in the lower animals, and probably in man too, gives rise to a higher degree of immunisation than obtainable with dead vaccines. It must be stated, however, that in man the immunisation obtained by two inoculations of this vaccine or any of the dead vaccines is never complete; it is oly partial. 3. Cholera and dysentery attenuated live vaccines can be obtained by using a somewhat similar method as that for preparing the typhoid vaccine; but for the dysentery vaccine peptonewater cultures and not broth cultures should be used, as these give rise to an extremely painful infiltration at the site of inoculation. Much further investigation is necessary on the subject of dysentery vaccination. 4. I have no personal experience of the sensitised live vaccine prepared in 1911 by Metchnikoff and Besredka, but their results seem to be extremely good, as shown by Alcock. The experimental work of these observers on live vaccines is of great importance, having demonstrated that chimpanzees can be rendered immune to typhoid fever only by the inoculation of living vaccines, ether sensitised or non-sensitised. 5. Various mixed vaccines can be prepared, either dead or live attenuated vaccines. The inoculation of such mixed vaccines is harmless and apparently in the lower animals they induce a degree of poli-immunisation, the blood developing protective substances for each of the germs inoculated. 6. I am of the opinion that in countries where paratyphoid A and B are endemic besides typhoid fever, a mixed vaccine typhoid paratyphoid A paratyphoid B should be used. If a live mixed vaccine should be objected to, a dead mixed vaccine can be used with satisfactory results. The inoculation of such vaccines as shown by me since 1909 is harmless, and it is probable that they give a certain degree of immunisation for all three infections.

Emetine Treatment of Dysentery in Young Children.—R. G. Archibald administered emetine in two cases of amebic dysentery in children aged respectively eight and twenty-eight months, and concludes that young children are extremely tolerant f th drug. In severe cases he deems it advisable to use an initial dose of one sixth gran for a chld of two, and repeat this dose every twelve hours until one half grain has been given. The total amount of emetine given should be controlled by microscopic examination of the stools, at intervals during convalescence. Failure to find entamoebae on the first examination does not preclude the possibility of their being present; their detection is facilitated by a preliminary purge. In order to avert relapses, emetine should be continually given once weekly or fortnightly for at least three months after apparent cure. The intramuscular method of injection is best, particularly in patients whose vitality has been somewhat lowered.

Diseases of the Respiratory System

Under Charge of

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Respiratory Infections in Infants' Wards.—By Walter E. Campbell, M.D., and Alan Brown, M.D., (Amer. Jour. of Child. Diseases, May, 1914 p. 381). These authors remark that while deaths from gastro-intestinal troubles have diminished much during the last decade, deaths from respiratory diseases, on the other hand, have greatly increased. Respiratory troubles are at present the great scourage of all infant hospitals and asylums, and a common cold in the head may rapidly travel all around a ward and the subsequent broncho-pneumonia claim many victims. In hospitals it has been shown that the degree of susceptibility of a child to any infection bears a definite relationship to the length of residence in the institution; for this lowered vitality the term hospitalism has been introduced.

While it has been demonstrated that measles, scarlet fever, diphtheria, smallpox, and mumps are in reality contagious diseases, and that simply by placing the patients suffering from these different diseases in stalls cross infection is avoided, such prophylactic measures have little or no effect on the dissemination of coryza and bronchitis. It would thus seem that transmission of the pneumococcus and staphylococcus causing catarrhal conditions of the respiratory system is by the air. As it is practical impossibility to eliminate completely this factor, these authors have practised post-nasal injection of boracic lotion or hydrogen peroxide, followed later by saline twice weekly, with very encouraging results. In one ward where this douching was practised there occurred during a period of six months 27 cases of infection, whereas in a control ward, where no such measures were undertaken, there occurred 57 cases of infection of respiratory tract during the same period. Two cases of retropharyngeal abscess developed in the ward where the prophylactic measures were adopted, while not one was met within the control ward. On the other hand, only 4 cases of otitis media developed in the ward where the post-nasal douching was practised, and 11 in the control ward—Glascow Med. Jour.

Recurrent Bronchitis in Children.—Dr. Charles Gilmore Kerley of New York presented this paper before the N. Y. State Med. Society. He called attention to the fact that in children subject to recurrent attacks of bronchitis there was an underlying condition which was common to the difficult feeding cases, eczema, recurrent vomiting, and billious attacks, and that these children were frequently the offspring of parents who suffered from disturbed metabolism. They frequently bore cow's milk and sugar badly, and exhibited a lessened resistance. Recurrent bronchitis was much like other recurrent conditions. It was more apt to come on during cold months when the eliminative functions of the body were less active. It had been found that 41 per cent. of the cases of recurrent vomiting suffered from recurrent colds. A diet having an excess of fats and carbohydrates seemed generally responsible for recurrent bronchitis in children. When the carbohydrate content of the diet was cut down in such cases a marked improvement usually ensued. Milk and sugar were not necessary to the child after the age of one year or fifteen months. Cane sugar was not recognized as a food until three hundred years ago. Countless millions of human beings had lived their span of life without it. The author reviewed the history of cane sugar since 325 B. C. to show that it had only been recognized in medicine and as a condiment until the sixteenth century, and that it was in no sense a necessary igredient of food. Dr. Kerley presented a number of children whose histories showed that they had been reduced to a state of chronic invalidism by recurrent attacks of bronchitis and who were restored to a normal healthy childhood by proper regulation of the diet. It was his custom to reduce the amount of carbohydrate in the diet by cutting off the cow's milk entirely or else giving only a pint daily of skimmed milk. Sugar was forbidden and the fat content of the diet greatly reduced. Many of the parents feared that the children were being starved, but on the contrary, they very generally gained in weight quite rapidly after the removal of the sugar and fat from their food. These children were of the so-called lithemic type and so he gave them some alkali (usually salicylate of bicarbonate) and kept the bowels open. There was a certian class of cases in which thyroid extract seemed to be indicated and these he gave one-half grain twice a day.

Papillomata of the Larynx in Children. Papillome im Larynx der Kinder..—Chiari. Wiener medicinische Wochenschrift, No. 39, 1913. The writer's paper is largely statistical, and some interesting facts in regard to the frequency of laryngeal papillomatra in children, and the results of different methods are brought out.

V. Bruns, up to 1878, had collected forty cases that had been treated intra-laryngeally only, with thirty cures, three partial cures and five recurrences, while in two cases the result of the treatment was not known.

After the introduction of cocaine, the endo-laryngeal operations for the removal of papillomata, increased very greatly.

Between 1879 and 1896, Rosenberg gives the records of forty-eight cases, the majority of the operations having been performed under cocaine anesthesia. Thirty-one cases cured, and six improved. There were seven doubtful results, one recurrence and three deaths

Of twenty-three cases from Chiari's clinic, in Vienna, tracheotomy was performed in ten with one death, two recurrences and six cures, after endo-laryngeal methods employed later. One case was not cured.

Thyrotomy should only be performed in the worst cases.

Rosenberg arrived at the following conclusions in this respect: The operation is particularly dangerous during the first four years of life, over 13 per cent of the operations resulting fatally; hoarseness, because of injury to the vocal cords, frequently follows; permanent strictures may result and recurrences after thyrotomy are frequent. He quotes Austin, who performed thyrotomy seventeen times on the same child for recurring papillomata.

The author comes to the following conclusions: Intralaryngeal operations under cocaine anesthesia, should be first attempted, particularly in older children. If the indirect methods fail, direct laryngoscopy under general anesthesia should be employed. When extreme difficulty in breathing developes, tracheotomy should be performed, and later with the canula in place, operations may be performed by either the direct or indirect methods.

Infant Feeding in Health and Disease

Under the Charge of

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Infant Feeding with Undiluted Cow's Milk.—By William B. Hanbridge, M.D., in The New York State Medical Journal. In 1912 he reported 39 cases which had been tried on various foods. Whole milk as a last resort. Fifteen of these cases were fed from birth. Five were suffering from digestive disturbances. Ten were healthy. One of the ten healthy ones passed curds and was changed to a mixture of milk and cream. Four of the sick ones did well. The fifth one had gastric catarrh and did not do well. Two were so emaciated and so badly fed that they were thought to be hopeless. Case No. II weighed at birth 6 1-2 pounds, fed malted milk for four weeks, but did poorly. Eskay's was given for a week, was then put on laboratory milk and vomiting which had continued from birth, still continued. Malted milk was again tried with poor results. At the age of four months and weighing 8 1-2 pounds, was put on undiluted cow's milk. 2 1-2 oz. and small amount of sugar every 2 1-2 hours. Vomiting improved and in one week disappeared and did not cry with the colic.

At age seven months weighed twelve pounds, looked healthy and strong and was fed 30 ozs. wholemilk per day. 4 1-2 ozs. teaspoonful of sugar at each feeding. Dr. W. Grant Cooper reports a premature of seven months, weighing 2 1-2 pounds, fed on mother's milk for three weeks, not being able to nurse, then modified milk, for five weeks was tried. At the end of this time weighed same as at birth and was put on three teaspoonsful of whole milk, every two hours, gradually increasing the amount and the intervals between feeding. Gained rapidly and at 5 1-2 months weighed twelve pounds, at ten months weighed fifteen pounds and takes three pints of whole milk per day.

Dr. Mary Bryan fed ten babies from the ages of two days to five months. All did well on the whole milk. Dr. Quain fed seven on the whole milk, five from birth, one from six weeks, and one from three months. He had trouble with only one, and that had digestive disturbances.

Dr. Elkins, of Massena, fed Case No. 1, 2 1-2 months old, fed on commercial foods and lost weight and strength. Was given 2 oz. every two hours of whole milk and did well.

Case No. II. Born of a Tubercular mother fed on the whole milk and did well.

Case No. III. Baby, six months old, emaciated, vomiting and restless, was given whole milk, but died from exhaustion and lack of care.

Case No. IV. Baby ten months old, weak and could not sit alone. Was on modified milk, but did not do well, was put on whole milk and did well.

Dr. Mason, of Massena reports thirteen cases where the whole milk was tried. Eight were successful, but five failed. Three of the five did not seem to be able to digest cow's milk in any form. He also had several cases of breast fed, until four or five months old. Then he put them on whole milk and they did well.

Dr. Hanbridge believes that children fed on concentrated food should be fed only when hungry. Do not waken to feed if digestion is good and appetite keen. They will look for more to eat, but if not well, will not want to eat so often. Should not feed the baby if it cries, because it is sick. Should distinguish between the cry of suffering and from hunger. He also says that it is possible for us to get a food that chemically resembles mother's milk, but, should we be guided by chemistry? Food should not remain too long in the stomach. By putting too much into the stomach do we not dilate and cause atony and so interfere with the stomach properly emptying itself? Also we might dilute the gastric secretion and also interfere with digestion. Every cell of absorption and secreation might be over taxed, the bowels distended, the muscles weakened and colic produced. He also says that 1 1-2 to 2 1-4 oz. of whole milk per one pound weight of the baby is enough for the 24 hours, or in other words 1-2 to 2-3 the quantity that we would give of modified milk. One authority states that we should give an infant weighing ten pounds 32 ounces in 24 hours. Making an amount in proportion to weight which would be impossible for an adult to take, showing that infants can take larger quantities of liquid per weight than adults.

Certain Neglected Aspects of the Problem of Infant Mortality.—By Philip Van Ingen, M.D., N. Y., in the N. Y. State Medical Journal, Nov. 1913. Statstics show a large portion of the mortality among the infants varying from 25 to 40 per cent. is during the first month of life, and is classed as congenital debility and prematurity. It is hoped that the milk stations, by dispensing of already modified milk, for a few months in the year, and their sending around nurses to instruct the mothers all the year around how to modify and keep clean the milk. Also to care for the babies, will result in a reduction of this mortality.

Statistics also showed that the mortality under one month of age, was greater during December, January, March, April, since 1911. The New York Milk committee has sent nurses around to direct toward insuring as little hard work as possible during the latter months of pregnancy; toward improving the general nutrition of the mother; toward improving home conditions and toward securing the best possible care at the time of confinement.

Up to Dec. 31, 1912 this committee has record of 1375 mothers so instructed, which gave a mortality of 27.5 per thousand births as against 40.2 per thousand for those cases not receiving that instruction. He also showed that only 2.7 per cent. of mothers at the end of one month did not nurse their babies.

Sir George Newman said in his book on Infant mortality, "The problem of infant mortality is not one of sanitation alone, or of nursing, or indeed of poverty as such; but is mainly a question of motherhood," or as Van Ingen said, prenatal prevention.

Recent Work on Children's Diseases.—By Hugh Thursfield, M.D., F.R.C.P., Assistant Physician to St. Bartholmew's Hospital; Physician to Out-Patients, Hospital for Sick Children, Great Ormond street, etc.

He quotes Dr. Pritchard as saying that we are at last in the possession of an efficient substitute for dairy milk. That is no more expensive than the raw milk; in the form of dried milk prepared by a new process in the course of which the ray milk, after concentration in vacuo at a low temperature, is forced at a high pressure through fine perforations in a metalic disc.

The resulting spray is carred through a drying chamber; the solid constituents of the milk fall as a dry powder and the water is carried off as vapor. The advantages of this method are that, as the drying takes place at quite a low temperature, the whey albumins are not altered, nor is the caseinogen coagulated, and can all be done at an economic advantage of a cost not exceeding the cost of raw dairy milk. Thereby giving the poorer class a chance to use it.

Some Observations on Infant Feeding.—By Harry Rulison, M.D., in The New York State Medical Journal. Dr. Rulison says that research in Chemistry and Metabolism has taught us that cow's milk cannot be converted into human milk and that there can be no single method of substitute feeding adapted to all cases.

The percentage feeding has done much to advance the science of infant feeding, especially through the hospital and laboratory feeding. Because of the principle and cómplicated calculation involved. Many physicians have resorted to proprietary foods. Finkelstein commented on the wide tolerance of a healthy infant for the different foods and that the minute changes in percentages was unnecessary. That we must have a thorough knowledge of the principles of feeding. First nutritional value of the food as a whole and of each individual element entering into its composition. No. 2, the nutritional requirement of the child to be fed and the correct interpretation of the various signs of nutrition disturbances together with the ability to refer them to the particular food element causing the disturbances. The failure to do this is the cause of unsu ccessful feeding. We must have a plan well grounded for the feeding in health.

First. Such caloric value as to meet the requirements of the infant.

Second. The component element must be in such proportions as to meet the demands and digestive ability of the infant for whom it is intended. It need not closely resemble breast milk, but should be so flexible and easily changed as to meet all the requirements of the infant. Also to be prepared by the ordinary mother.

Rulison believes that whole or smommed milk with the addition of sugar, makes the best means of feeding the infant artificially. Both the percentage and the caloric methods have their advocates and are of value, but we should not allow either one to hamper us in feeding if the case requires more or less of a given food. That energy quotient of 100 calories per kilo of body weight diminishing to about 70 or 80 at the end of the first year has worked out well in his experience, also that the quotient for the premature under nourished and atrophic children is much higher. Generally the baby is everfed but if the food values were calculated, we would find more than might be thought to be crying from hunger.

The quantity of food and the interval of feeding should depend on the age and the development of the child. Dr. Rulison is in favor of larger quantities and longer intervals. After three weeks of life they can take one ounce more than the capacity of the stomach without any disturbance if the interval is long enough. From Cowie and Lyon we learn that different degrees of acidity or alkalinity may hasten or delay the emptying of the stomach so that a high fat mixture with its increased alkalinity may delay the passage of the food into the duodenum.

Cow's milk mixtures do not leave the stomach normally under 1 or 2 1-2 to 3 hours and in hot weather, is more likely to be 5 hours so according to Grulees allowing one hour to rest, feeding every 4 hours is not bad.

Long intervals with plenty of water in between and night feeding cut out as soon as possible is better.

Food Elements-Protein or Casein was long considered the source of a lot of trouble. The teaching of Biedert that the presence of curds in the stool, thought to be due to casein, was due to high fat instead, Hamburger thought that protein should furnish not less than 8 per cent. nor more than 10 per cent. of the total energy of the food, that if much in excess of this, we increase the heat production and so increase the workings of the body. Holt, Courtney and Wollstein proved that the infant can stand high percentage of protein if the whey salts are present but if they are withdrawn, the temperature goes up. Should begin on a 1. 33 per cent to 2 per cent. and can increase up to 3 or 4 per cent. by the end of the first year. He found also that the curds passed were fat curds and very seldom due to proteins, also that he did not have colic with the high protein and that most of the so-called colic was due to hunger. He says that such measures as changing the casein-Lactalbumin ratio. Whey feeding and milk peptonization are seldom necessary. That protein cannot be split in the stomach, on account of normal absence of free H CL. He also found that the protein in the stomach was dissolved without the free H CL.

Fats—We are learning that a great many of the difficult feeding cases are due to the inability of the infant to digest and utilize fat properly, although Ibrahim and Sedgewick have found that more fat was split up in the stomach than was formerly believed.

Hess has shown the pancreatic lipase to be present in normal amount in acute intoxication and nearly so in atrophy. That a great many infants cannot digest fats above 2 per cent and will do well on buttermilk and skimmed milk without causing stomatitis. Growth depends upon the protein and and one cannot get along without it. The lack of Carbohydrates cause acidosis. The lack of fats can be replaced by carbohydrates to some extent.

The well known tendency of the child to acidosis and its relation to recurrent vomiting should be borne in mind when we are feeding high fat. In habitual vomiting we have a hyperchlorhydria and aften the presence of organ acids (lactic and Butyric) or may have retention of food. In cases of Pylorospasm we should lower the fats.

Carbohydrates—The ones most commonly used in infant feeding are the disaccharides, lactose, maltose, and saccharose together with starch and dextrin. The one most easily assimilable is maltose and the least liable to undergo fermentation, while lactose is more liable to fermentation. Maltose is beng wdely used. Personally he says that he has not obtained any better results with it than he has with plain cane sugar yet he things it safer in convalescence from dyspepsia, acute intoxication and atrophy.

The great objection to the use is its laxitive effect, also the loss of appetite. Hess has demonstrated that amylae is present in early file and so starch is digested.

If the child developes an intolerance for one of the carbohydrates should change to another also should stop it during an attack of diarrhea, thought to be just as well if the barley water was stopped and plain water or sugar water given.

Salts—The inorganic salts play an important part and the whey-salt should be watched. It is probably that many of the edemas occurring during infancy without renal or cardiac lesions depend upon defective metabolism of sodium chlorid.

Dr. Rulison has seen odemas with suppression of urine disappear over night on placing the infant on a salt free diet and conversely the infant under treatment for marasmus, gained 4 pounds in fourteen days when changed from eiweiss milk to skim milk.

Whey feding in cases of dyspepsia, acute intoxication, atrophy, and spasmophilia is to be condemned. It yields only 230 calories per liter. Its high salt content contra-indicates its use. The routine use of lime water in food is a bad practice. He also says that the proprietary infant foods are condemned more often than is necessary, especially the malt preparations. The physicians should know the composition of the food to be used, the caloric value and the indications for its use. The direction on the package will only apply to a few so we should not use them. Each case of feeding should have a rule of its own.

BOOK REVIEWS

A Treatise on Clinical Medicine. By William Hanna Thomson, M.D., L.L.D., formerly Professor of Practice of Medicine and of Diseases of the Nervous System in the New York University Medical College; Ex-President of the New York Academy of Medicine, etc. Octavo volume of 667 pages. Philadelphia and London: W. B. Saunders Company, 1914. Cloth $5.00. Half Morocco, $6.50.

The newest and latest book on internal medicine is before us from the pen of William Hanna Thomson, whose activity as a medical teacher, and general practitioner for fifty years peculiarly fit him for the task which he has executed with credit to himself and honor to the profession.

"Thomson's Clinical Medicine" is in a few words, beside medicine, the strict application, medical thought, experience and learning to the cure and relief of the sick. The introduction embraces three chapters, in the first the mechanism of "catching cold," is pointed out as a factor in the etiology of other diseases in which treatment has due consideration. Following, is a chapter on common symptoms and their interpretation: pain, emaciation, cough, dyspnoea, edema and vomiting. The subject Pain is considered at great length, more than eighteen pages being devoted to pain of every kind and condition. The next chapter considers Remedies, their action and special uses, medicinal, non-medicinal, vaccine and serum therapy. The uses and value of electricity, cold, heat, habit and environment, are most interestingly considered.

Dr. Thomson devotes Part II, embracing 165 pages, to infections, (a) acute infections directly communicable or contagious, (b) infections communicable by intermediate carriers, (c) infections communicable by inoculation and (d) infections by the bacillus Coli, concerning all of which the author gives definite means of diagnosis as well as treatment.

Part III is a section of XXII chapters, embracing 414 pages in which are very fully covered the "Diseases of Special Tissues or Organs.' which is too voluminous to review at length. The Chapter on the ductless glands is particularly valuable, bringing out the bearing of the internal secretions on disease. The chapter on "Diseases of the Organs of Digestion" is of more than special interest, very thorough and explicit, throwing much light upon the disorders of digestion and assimilation. The chapter on "Cancer" of the various organs contains the latest diagnostic knowledge on this subject, as well as the latest methods of treatment.

Few teachers in this country can claim a longer apprenticeship in clinical medicine than William Hanna Thomson; none a more intimate acquaintance with students during the many years he taught at the New York University Medical College. This work not only represents the medical experience of a practitioner of some fifty years, but in addition, a careful culling of the best that there is in contemporary medical literature, by one who well understands the art of separating the good from the worthless.

In closing this all too brief review, we predict that as a textbook on practice, it will be well received by the entire medical profession. It is a book for the desk and not for the book-case, and to commend it is both a pleasure and a duty.

Der Salvarsantod. Seine Ursache und Seine Verhutung. Intravenose oder intramuskulare Salvarsaninjektion. By Carl Schindler. 184 pages. Price $1.25. Illustrated. Verlag Von S. Karger, Karlstrasse 15, Berlin, 1914.

The report of a goodly number of salvarsan fatalities of late, makes the appearance of this book particularly timely. The author has made a very exhaustive study of the literature of these fatalities and discusses particularly the value of intramuscular or intravenous administration. He comes to the conclusion that a much better technique is desirable and that the intramuscular administration is the better, since a more gradual absorption of the arsenic is thus obtained, which minimizes the number of fatalities.

A manual of Infantile Paralysis with modern methods of treatment including reports based on the treatment of three thousand cases, by Henry W. Frauenthal, A.B., M.D., Surgeon and Physician-in-Chief, New York Hospital for Deformities and Joint Diseases, and Jacolyn Van Vliet Manning, M.D., Epidemiologist, Wisconsin, 1908, Epidemic Acute Poliomyelitis. Copiously illustrated with more than one hundred engravings, nearly all original. 365 pages. Cloth, $3.00 net. Philadelphia, F. A. Davis Company, Publishers. English Depot, Stanley Phillips, London, 1914.

This newest and latest book on Infantile Paralysis is from the pen of authors who have made a study of this subject based on reports of more than three thousand cases, and so far as we know, is the only book that has yet appeared on the subject.

This volume records the author's personal experience with acute poliomyelitis in its epidemic appearance, symptomatology, diagnosis, and methods of treatment. They have endeavored to make the manual as free from technical terms as possible in order that the subject matter may be more easily grasped. The chapters of physical therapy and manipulative treatment are written in plain, concise language, that even a parent of a case might read, and appreciate just what is needed for the patient. The spontaneous improvement which occurs in a certain number of cases is considered in detail and methods pointed out by which deformities may be prevented and cases which have a serious prognosis may be remedied by the treatment outlined.

The authors have omitted reference to the obsolete, and sometimes misleading literature of the period which antedated the present pandemic of poliomyelitis. They have included numerous clinical descriptions, case reports, and autopsies consisting largely of cases of the more obscure, and hitherto unrecognized types of the eight classic forms of this disease.

The authors go very deeply into the differential diagnosis and prognosis of poliomyelitis. The subject of treatment includes the prophylaxis and general treatment including hydrotherapy, electrotherapy, physical massage, and passive motion and the therapeutic exercises performed in front of the mirror, breathing exercises, mechanotherapy, and the surgical teatment of this disease all receive due and careful consideration We pronounce it the best manual on the subject that it has been our pleasure to examine.

The Diagnosis and Treatment of Digestive Diseases. A practical treatise for students and practitioners of medicine, by George M. Niles, M.D., Professor of Gastroenterology and Clinical Medicine, Atlanta Medical College Gastroenterologist to the Georgia Baptist Hospital, Wesley Memorial Hospital, Atlanta Hospital; Consulting Gastroenterologist to the Anti-Tuberculosis Association, Atlanta, Georgia. With 1 colored plate and 86 other illustrations. Cloth binding. 570 pages. $5.00 net. Philadelphia, P. Blakiston's Son & Co., 1012 Walnut street.

Dr. Niles, in presenting this volume to the profession emphasizes the fact that it is far from his intention to divorce gastro-intestinal diseases from the broad field of internal medicine to which they rightfully belong. His main purpose is to answer for the student and busy general practitioner two important questions regarding these diseases, viz., "What is the disorder? ' and "What should be done for it?"

Dr. Niles presents the subject of diagnosis and treatment of digestive diseases in a concise but easily intelligible manner. His descriptions of the various reliable tests for the objects of study of the gastric contents, intestinal juices and feces are concise and to the point. He makes very plain and practicable the methods of determining the position, size, motility, etc., of the stomach, intestines, and other abdominal viscera. He gives in a plain, but succinct statement, the diagnostic methods indicated in the differential diagnosis of digestive diseases and his teachings of special therapy as applied to these diseases is exhaustive, practical and satisfactory.

Dr. Niles has very wisely omitted lengthy arguments on unsettled etiological questions, prolix descriptions of rare conditions possessing only academic interest, the consideration of pathologic states of a purely surgical nature. He realizes the importance of economizing the reader's time by expressing himself in a clear, explicit manner. In many instances, he has departed from the beaten track, voicing conclusions and consequent therapeutic procedures at variance with those laid down in some accepted textbooks. These conclusions he has reached after years of study and observation and the therapy he advises has proven satisfactory in his hands.

Altogether, the work is the most satisfactory one yet presented on the diagnosis and treatment of digestive diseases.

The "Nauheim" Treatment of Diseases of the Heart and Circulation. By Leslie Thorne Thorne, M.D., B. S. Durham, M.R.C.S., Eng., L.R.C.P., Lond. Consulting Physician (in London) to the St. John's House of Rest, Mentone; late Medical Examiner, London County Council Technical Education Board. Fourth Edition. Crown Octovo. Pages VIII and 104. 55 Illustrations. Price 3-6 net. London. Bailliere, Tindall & Cox, 8 Henrietta Street, Covent Garden. 1913. All rights reserved.

The Nauheim Treatment of Diseases of the Heart and Circulation by Dr. Thorne has met with phenomenal success as a book of instruction on this subject. The fact that the fourth edition has been called for is proof, sufficient, of its value as a guide in the treatment of diseases of the heart and circulation. This present edition has been amply revised and the records of old cases have been brought fully up-to-date, illustrating the result of the treatment over a long period of years. The author does not deem it necessary to enter into a lengthy discussion of the theories of the Nauheim treatment, or to give a description of Nauheim and its baths since he considers that every well informed physician is familiar with both. The author believes that many physicians who have hitherto not used this treatment would be led to regard it as a most valuable agent in the treatment of diseases of the heart and circulation, were they to adopt the methods of demonstration which he has practised for sixteen years with the most satisfactory and successful results. He outlines the methods of the treatment of blood-pressure and its general considerations in the most satisfactory and masterly manner.

In Chapter I the demonstration of the baths is very succinctly described. In Chapter II will be found a most satisfactory description and demonstration of the exercises first described by the late Dr. Augustus Schott and great emphasis is laid on this treatment as an adjunct to the baths. In Chapter III is considered the selection of cases suitable for treatment. Chapter IV is made up of nine clinical cases showing results before and after treatment.

Many serviceable illustrations of great assistance elucidate the text. We believe that no physician could read this work without being better prepared to give competent advice in cases of diseases of the heart and blood-pressure.

Diseases of the Heart, by James MacKenzie, M. D., F. R. C. P. Physician to the London Hospital, in charge of the Cardiac Dept., and Consulting Physician to the Victoria Hospital. Third edition, revised and enlarged. 470 Pages. Handsonme buckram binding.

$5.50 net. Oxford University Press, London. American Branch, 35 West 32nd street, New York City.

The opening chapters deal with clear descriptions of the largest investigations concerning the anatomy and physiology of the heart, and considers the influence of the respiratory system and the arterial system upon the function of this organ. There is also a description of the various forms of modern apparatus which are employed in the study of circulatory states at the present time.

The advances made in the knowledge of diseases of the heart since the last edition published in 1910, have necessitated the rewriting of the greater portion of this book. The principal changes are mainly along the lines of a clearer differentiation of the physical signs of diseases of the heart, and for this purpose, Dr. MacKenzie has introduced the electro-cardiogram as a diagnostic aid. Another change is the bearing of heart manifestations on the question of heart failures. Dr. MacKenzie has attempted to base the treatment of diseases of this organ on a sound and scientific principle. Heretofore, the study of cardiac physiology and therapy has been based on what happens to normal hearts with normal rhythm. The author's investigations have convinced him that in hearts affected by disease, the reaction of the heart, the stimulation, is profoundly altered. In consequence of this, the author has found it necessary that the physiology of diseased hearts. and especially of those with abnormal rhythm, should be carefully studied; all of which the author clearly outlines in this new revision.

As the nature of the heart affection can only be inferred from the presence of one or more symptoms the author's object has been to ascertain the mechanism by which the symptoms are produced, to find out their relationship to organic changes in the hearts, to ascertain their prognostic significance, and finally to employ them as a guide for treatment.

The author, when referring to the digital examination of arteries tells us that the trained finger is the best guide that we have to judge the blood-pressure of an artery but not for a moment does Dr. MacKenzie depreciate the value of instrumentations in arriving at exact and scientific diagnosis.

Probably few physcians know what is meant by "nodal rhythm" and equally few are well enough trained in modern methods to know that this nodal rhythm is present in the majority of cases of severe heart failure, and in a great many instances, a breakdown is directly attributable to its inception, nodal rhythm being a condition in which the contraction wave arises in the auriculo ventricular node in disticton from sinoauricular node, with the result that incoordination between the auricle and ventricle is established, the ventricle contracting before the auricle. In disease, or distention, of the auricle the passage of the contraction wave from the sinoauricular node may be blocked. So, too, says Dr. MacKenzie "it is important to remember that digitalis may at times, produce an artificial heart block; and that it is particularly prone to do this when such a condition of the auricle as we have just described, is present."

Dr. MacKenzie in this work, besides dealing with and describing abnormal physiological states from an etiological point of view, also considers in great detail, the pointing out of conditions in which many drugs, chiefly digitalis, are now employed in a haphazard manner, which often do more harm than good.

The closing pages are devoted mainly to the theory of cardiac conditions. There can be no doubt that MacKenzie's first edition marked an epoch in the study of cardiac affections, and there can be equally no doubt that the appearance of his second edition in an American reprint will be of the greatest possible benefit to physicians and patients alike upon this side of the water. The many illustrations, the large type, the excellent language, and above all the scientific stand-point of the author cannot fail to interest medical men who desire to be more than mere routine dispensers of powerful drugs.

PEDIATRICS

Vol. XXVI OCTOBER, 1914 No. 10

EDITORIAL

THE REAL SIGNIFICANCE OF THE ENLARGED EPITROCHLEAR GLAND

It is probably not far from the truth that more than two thirds of the present generation of active physicians were taught to attach a special and pathognomonic meaning to enlargement of the epitrochlear lymph follicles. There are few undergraduate lecture rooms where, some time in the course, the professor has not announced that enlarged epitrochlears are exclusively associated with syphilis—meaning, i.e., not that syphilis affects these follicles, but that if the follicles are affected syphilis is the cause.

There is not much doubt that the statement is erroneous Careful observation for more than a year past in one of the largest dispensaries in this city have been made by a competent observer. Males and females of all ages were included. Between 1200 and 1600 consecutive cases were examined. The results were surprising. In about 60 or 65 per cent of the cases both glands were more or less enlarged. In about 10 per cent more one gland only was enlarged—thus leaving about 25 per cent only in whom glands could not be felt on either side. In all the positive cases the history and physical signs of syphilis were carefully sought for elsewhere, but not a tithe of them could be supposed on any reasonable ground to have suffered from either hereditary or acquired lues. Moreover, this particular dispensary is located in one of the foreign quarters of the city where syphilis is comparatively and surprisingly rare.

The cause is certainly in many cases non-specific. A certain number, particularly of the unilateral type, are of course due to bacterial infection of the forearm, hand or elbow. In palmar eczema, psoriasis of the forearm or elbow, furunculosis, septic infection of the nails and fingers—such lympathic swellings are common enough to be surprising by their absence. In the two varieties of leukemia not only one but the whole chain of epitrochlear glands may be swollen. The same may be true, though opportunities of observation are of course more rare, in pseudo-leukemia or Hodgkin's disease. A large portion of the remainder are attributable to scrofula, and if to this we add the very common "lymphadenitis simplex" of the tenements (an affection so far obscure in its etiology but is certainly not specific) we have probably explained a large number of the non-specific cases.

The opinion would seem to be justified that the special connection of syphilis with epitrochlear lymph nodes is a "fallacy of observation."

THE TREATMENT OF CHILDREN

Packard makes a number of points in regard to the difference in the medical treatment of children and adults. In the first place children cannot give their subjective symptoms. We have to depend more on our own examination and we must not forget that the child is not a man cut down. Much may be learned by close observation of attitude, the character of the cry and respiration, the facies, and examination of the fontanelle as a routine matter. He points out some ways in which he thinks we are misled in estimating the frequency of certain diseases in children, for example, typhoid, where the typhoid tongue as seen in the adult is not ordinarily met with. We must also avoid falling into error in examining the chest of children, as the position of the apex beat is quite different, being higher, and the second sound in the pulmonary area is lower and more clearly defined than in older persons. He also found a curious square area of dullness at the extreme left chest posteriorly, closely resembling what has been described by Ewart as a sign of pericardial effusion. He thinks the left lobe of the liver may possibly be responsible for it. The physical signs are often quite different in children and adults; thus the cracked-pot sound can be readily developed on percussion over the healthy lung in an infant. Croupous pneumonia is another disease in which there is a great difference between children and adults, and he thinks we see much more frequently silent pneumonia and noisy pleurisies. The examination of the abdomen even offers more peculiarities than the chest. The normally large liver is one point he refers to. As regards the nervous system he refers to three points, the absence of Kernig's sign, which seems to have no significance, the slight value of Babanski's reflex and the ease in which lumbar puncture can be performed. The question of prognosis is a matter of importance. Children recover rapidly; they also die suddenly. The toxin elimination may be presumed to occur with greater facility than in the adult, and the heart has greater reserve force and reparative power than has the heart of older persons. He speaks next of the necessity of individualism in milk modification for infant food, the dangers of the routine treatment of digestive troubles, the too frequent diagnosis of intestinal parasitism, the impropriety of slitting the frenum of the tongue and the indiscriminate use of braces in rickety children, also the importance of retropharyngeal abscess, the relatively easy vulnerability of the endocardium in the child, the variability of symptoms of malarial infection, etc.

PRACTICAL POINTS IN INFANT FEEDING

Habitual vomiting or regurgitation is almost always due to excess of fat; if not to this, to excess in quantity. For an infant with such symptoms one should never begin with any formula in which the fat is more than twice the proteins, and often equal percentages are better.

Habitual colic is nearly always from an excess of proteins. For such a condition one should not give more than one-third as much proteins as fat, and usually at first very low percentages. This condition is usually associated with the presence of curds in the stools, which requires the same treatment.

Something should be said regarding the changes required in milk modification during very hot weather. At such times both the proteins and fat must be reduced but particularly the latter. An infant can no more digest a high percentage of fat during hot weather than a soldier in a tropical climate can. It is seldom wise in any case, even of perfectly healthy children, to have the fat in the summer months over 3 per cent, and during short periods of excessive heat it should be reduced to 2 per cent.

PEDIATRICS

ORIGINAL ARTICLES

THE CARE OF THE NEWBORN

BY M. A. CLARK, M.D.
Macon, Ga.

Just as man, created in the image of his Maker and made ruler of the world, is the greatest of God's creation, so the young infant, making known its advent into this selfish world by a lusty yell, or lying quietly by its mother, is the most helpless of all creatures. By reason of this helplessness and because its life is the beginning of what should be the quintessence of the Creator's skill, the newborn should receive our greatest care and most tender consideration. Although intended to develop in Nature's true way, and guided by that reason which distinguishes men from the rest of creation, the infant is allowed to grow hampered by the false notions of old women and midwives and the traditions of grandmothers. For decades our own noble profession seemed satisfied to rest on the dictum of Wordsworth: "Our birth is but a sleep and a forgetting."

Marked advancement has been made in every branch of medicine, and no little has been done to make easier and more certain the life of the newborn; yet there is much that must be accomplished. To achieve the most good for the greatest number, the family physician, the noblest of them all, must be aroused to the importance of the proper care of the newborn and the growing child.

With the hope of helping to a little extent to incite such an interest and encourage more study of this most important branch of medicine, I present to you today a subject old and commonplace yet not deemed of sufficient interest to be discussed before this august assembly. I shall tell you in a plain, concise manner my plan of caring for the newborn, nothing new nor startling but that which means so much to the new creatures, who must some day take our places in the great battle of life.

Immediately after birth the child is wrapped in a warm blanket made ready by the nurse, and placed on its right side to protect the heart, and with its body slightly elevated that the mucus may run out of its mouth. The mouth and eyelids are well cleansed with a warm solution of boric acid. The eyes are now thoroughly washed with a warm saturated solution of boric acid, and, if there is any reason to suspect danger of infection, a few drops of a two per cent solution of nitrate of silver, or a ten per cent solution of protargol or argyrol are instilled into each eye, and then they are rinsed with the boric solution. The routine use of the silver salts in private practice is unnecessary and prone to do harm. These solutions should be used only when there is need to prevent infection.

By this time, the cord has ceased to pulsate, showing that the infant has received the full quantity of blood so essential to its growth and vigor, and is ready for the ligature. Stripping it of the Wharton's jelly about two inches from the body of the child, I tie the cord with a sterile tape or silk ligature already provided for that purpose. Making a second tie a short distance from the first, the cord is cut with a pair of umbilical scissors, the child being protected from injury by the left hand, and a piece of sterile gauze or cotton is placed over the stump.

If the child does not cry lustily or show other evidence of life well established, the usual methods of resuscitation are employed until the desired respiration is apparent.

Wrapping the infant in its warm blanket, it is given to the nurse to be placed on its right side in its own little bed separate from the mother and let alone.

After the mother has been made comfortable, the nurse is ready to give the newborn the first bath. If there is the usual coating of vernix caseosa, the free use of sweet oil or sterile vaseline, or if nothing else is available, a little clean home made lard, will facilitate the cleansing. A well developed and vigorous infant may be put in a bath of 100 F., but if it is delicate or the weather is cold, it is cleansed, a small part of the body at a time, being careful to keep it well protected from the cold. The full bath is not allowed until the cord has dropped off.

The bath being finished, the babe is now ready to be dressed. I always tie the cord a second time, to be sure of no after bleeding and then dress it with 1 to 2000 bi-chloride gauze. Borated gauze, or sterile gauze or cotton well dusted with powdered boric acid is a most desirable dressing. I began the use of the antiseptic gauze before the day of careful nurses and finding it so satisfactory have continued to use it. All are instructed to let the cord alone and especially to put no oil or grease about. The nurse is told to dust the navel with powdered boric acid and cover with sterile gauze or cotton after the cord drops off. The daily dressing of the cord is both unnecessary and liable to result in harm.

The newborn is now carefully examined to see that there is no lack of development or other defect, and the fond mother is reassured that the dreaded birth mark is absent.

After the cord is dressed, the nurse fastens snugly over it and around the infant's body a woolen flannel band six or eight inches in width. A soft diaper is now securely but loosely applied. With a medium weight woolen shirt in winter, a very light one of wool, or silk and wool for summer, a skirt of wool for winter, one linen or cotton in summer, and the little thin dress, the child is clothed and ready to be inspected by the doting parents and perchance grand-parents.

The little one is now weighed, and after being made snug and warm is put in its own bed to rest. The mother is advised to weigh the baby at least every other week, preferably every week. She is told of the usual loss the first week and the average gain to expect each subsequent week and urged to report to me any time that there is no gain for a whole week.

The child is put to the breast about an hour after the mother has been dressed, it being wise to have the beneficial effect of the nursing on the contracted uterus. Too, the warm colostrum is a comfort to the newborn and may act as a laxative.

The nurse is instructed to wash the child's mouth and eyes morning and evening and to protect the eyes from any strong light. The mouth should not be washed out before and after each nursing. The frequent washing of the mouth, tender and easily injured, has caused more sore mouths than it has ever prevented. If the nipples of the mother are well cleansed before and after each nursing, there is no need for the child's mouth to be washed.

After instructions to allow the little one to nurse only every four hours during the first day and once at night, and to give it a little warm water if fretful, it is left alone to spend the greatest part of the first twenty-four hours in sleep.

It is well to mention to the fond parents that the first urine is so pale that it does not stain the diaper, and they will not always know that the child has voided the urine and especially to tell of the occasional pink stain of the uric acid excess and its harmlessness. By so doing you will probably avoid being called in the late hours of the night to allay the alarm of the mother or nurse.

On the second day the infant is carefully examined to see that it is doing well. If the tongue is tied, it is clipped before telling the mother of its existence that she may not be distressed because of it. The daily examination of the newborn by the physician encourages the nurse to be most careful of its welfare and impresses those around of the importance of having simple, regular rules for its management.

If the little one has been fretful, or the stools frequent, I prescribe mercury with chalk, gr. 1-4, or calomel gr. 1-20, with sugar gr i, every two hours during the day. Nursing is now allowed every three hours in the day until the flow of milk is well established and then every two hours, waking the child to nurse, and only once during the night, that is after bedtime. After the first week, the interval of nursing should be two and one-half hours, and at the end of the fourth week, three hours. If there is a superabundance of milk the three months colic will soon be evident unless the length of time of nursing is shortened.

After ten days or two weeks, if the newborn is the hoped-for boy, the prepuce is examined and if found long and constricted, circumcision is advised. There are always some adhesions of the foreskin at birth but nature will usually correct them if let alone. If not overcome in due time it is well to break them with a blunt probe.

At subsequent visits the mother is impressed with the value of having regular habits for the child, that it should sleep without being rocked or jolted, it should not be taught to coo and laugh the first month but should be let alone except when it needs attention or it is time to nurse. Instruct her that an occasional cry does not harm the baby but really helps, and that by patience and perseverance she will have a vigorous happy child that is a real joy to its mother and truly a ray of sunshine in the home.

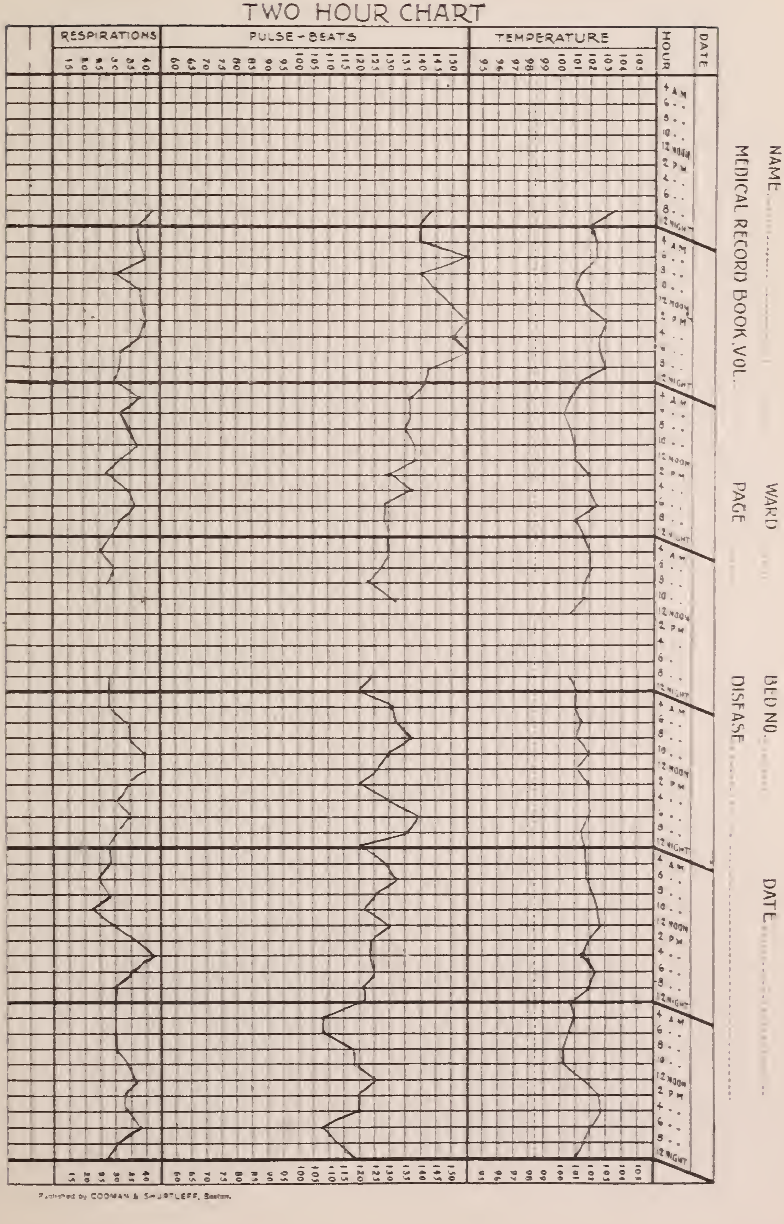
PLEURITIC EFFUSION FOLLOWING TRAUMATISM

BY W. A. ONDERDONK, M.D.
Louisville, Ky.

On March 23, 1914, about four o'clock in the afternoon, I was called to see a child of thirteen years who had been injured while playing on the street. It appears that this child, with several other little girls, had been roller-skating on the asphalt street; a wagon loaded with lumber was passing and the children "held on" behind this wagon. As this girl could not find a place behind the wagon, she grasped the side between the wheels. Everything progressed nicely until for some reason her skates refused to work, when she fell, and insists that the wagon ran over her; but this is extremely doubtful. When I saw her about half an hour after the accident, she was excited and decidedly nervous, there was considerable dyspnea, her pulse was rapid, and she complained of pain in the left side. At that time she was unaware that her arm had been injured, but examination showed a superficial skin lesion about six inches long on the outer aspect of the upper arm, extending from just below the shoulder to near the elbow. She had been carried into a neighboring house. The wound of the arm was cleansed with a dilute solution of the tincture of iodine, the edges drawn together with adhesive plaster, and an aseptic dressing applied.

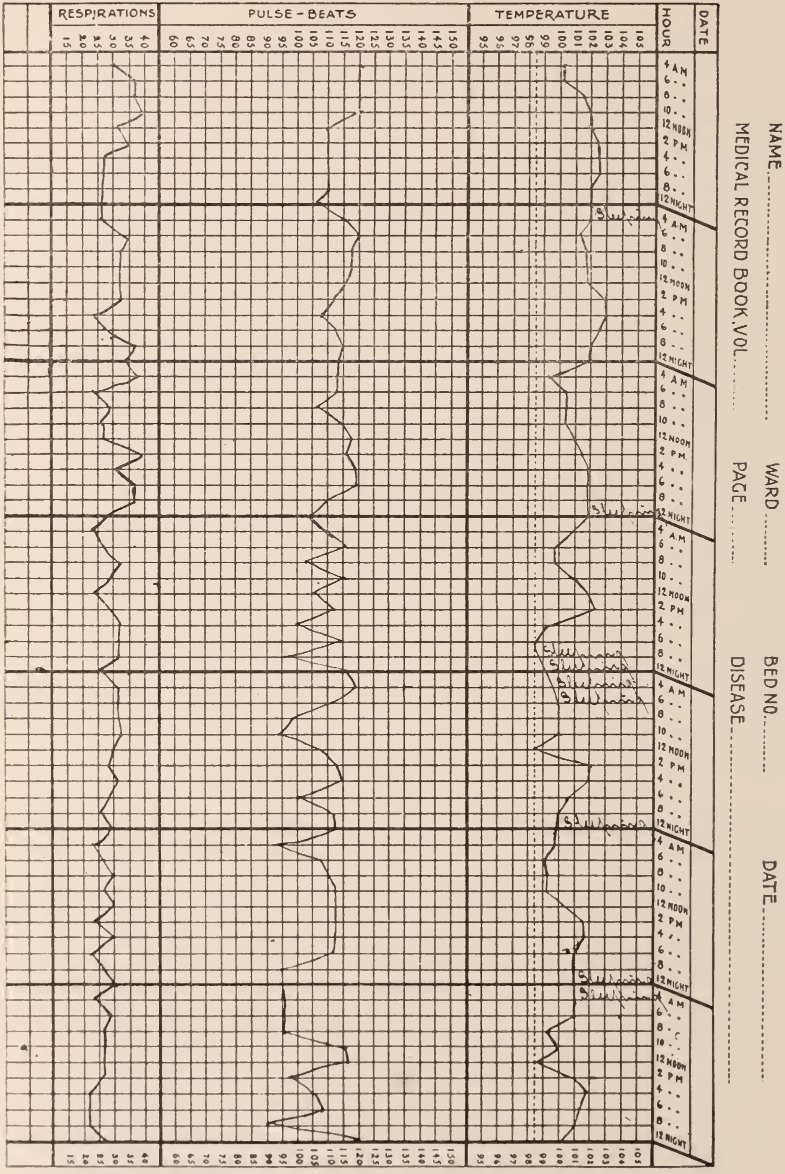
Careful examination of the chest wall revealed no broken bones, there being nothing but a small bruise at the level of the sixth rib on the left side. I was especially thorough in examining the chest wall because of the dyspnea present, fearing there might be an internal injury, but nothing indicative was revealed. However, the child complained that "she could not get her breath," and it was reported by the other children who were present at the time she fell that the first thing she said after being hurt was that "she could not get her breath."

The dyspnea continued, and about six o'clock the same evening Dr. Irvin Abell was asked to see the child in consultation. We made a careful examination of the chest, but found no broken bones or other evidence of injury. About ten o'clock the following morning, or fifteen hours after the accident, her pulse rate was 120 per minute, temperature 103½. F. Examination of the chest still disclosed nothing of interest, and her complaint of difficulty in breathing continued. A trained nurse was placed in charge of the patient that evening



Published by CODMAN & SHURTLEFF, Boston.

TWO HOUR CHART



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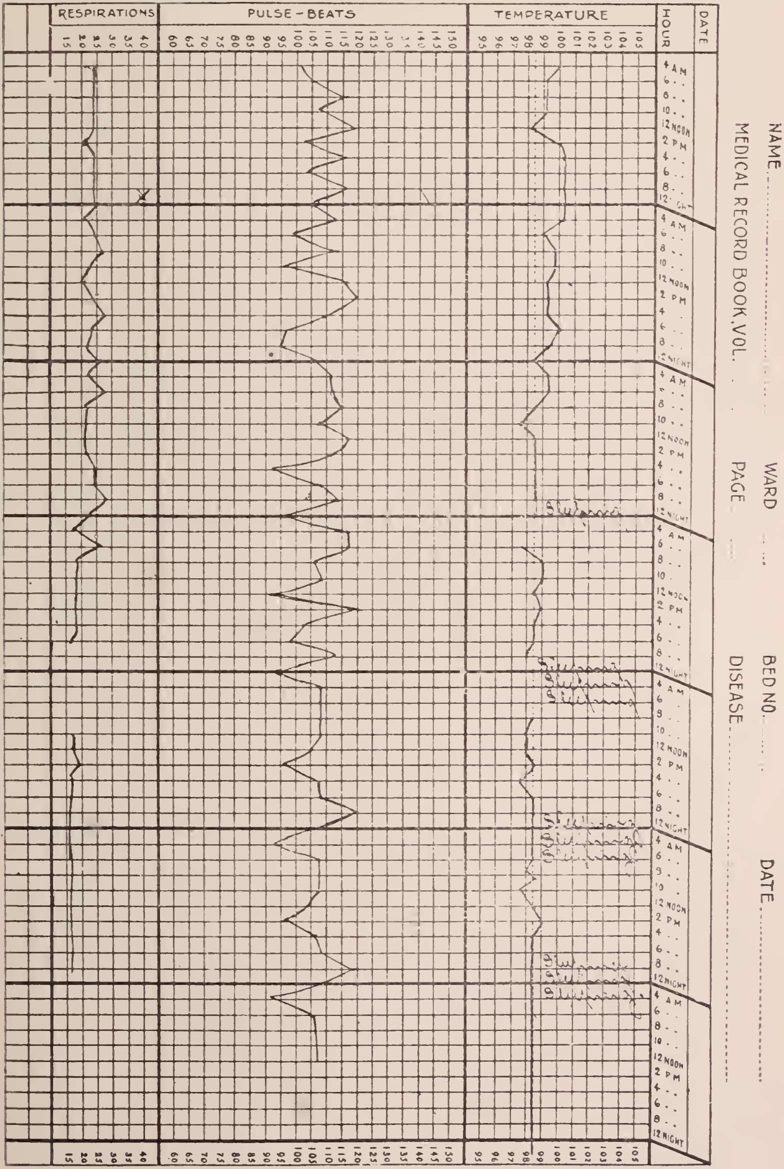

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The accompanying chart shows that the temperature was then 103½ F. The most interesting feature about the chart is the range of the pulse and temperature. It will be noted that when the temperature was 103½ F., the pulse was 145. At at another time temperature was 103½ F., with pulse of 160. The respiration did not vary to the same extent as the pulse and temperature. Similar conditions are shown throughout the entire chart extending over a period of nearly three weeks.

When I first saw the child I was informed that her saliva had been blood stained, and was shown her handkerchief upon which she had expectorated a small quantity of blood. However, no further expectoration of blood was noted. There was nothing at first to cause alarm, as I regarded the dyspnea as probably nervous in origin, but the second day after the accident a gurgling sound was heard over the lower part of the left lung during respiration. It was then thought possibly pneumonia had developed following the injury.

The child ceased to complain of dyspnea a few days later, but her respirations, pulse and temperature remained high. Later Dr. Carl Weidner was called in consultation to determine whether he could throw any light on the case. He examined the child carefully, but was unable to find any evidence of injury to the chest wall.

At this time on physical examination of the left chest the apex beat was found on line of nipple in fourth intercostal space about midway between nipple and sternum. The interspaces bulged only slightly on expiration. Percussion revealed dullness as high as the sixth rib extending on the back to the lower angle of the scapula. Above these points there was increased resonance. Percussion note not changed by position. Bronchial breathing pronounced over upper part of lung, but absent in the area of dulness. Increased vocal resonance over upper part of lung; greatly diminished over lower portion. No gurgling or tinkling sounds, friction sounds absent.

The treatment consisted of adhesive strips to chest to limit motion, later local applications of heat and cold, also preparations containing iodine in solution, iodide of potassium internally, and elimination with magnesium sulphate. In three weeks vocal fremitus returned in the lower portion of the lung. It seems certain there was an effusion within the chest which disappeared. The decided variation in pulse and temperature made the case rather interesting.

The child made a complete recovery. The dyspnea continued six days, but the high pulse and temperature persisted over two weeks. There was no tenderness about the left side after the first few days, when adhesive strips were removed. Slight infection occurred in the superficial wound of the arm, and pus discharged therefrom during the second week, after which healing promptly occurred. The child had been perfectly well prior to the accident.

The family history showed that the mother of this child died four years ago from what was said to be typhoid fever, but all the information obtainable pointed toward tuberculosis as the cause of death. The father is living and healthy. The family informed me that while the mother was ill this child was never allowed in her room. From the range of the pulse and temperature, it was thought the child might have incipient pulmonary tuberculosis, but there is no evidence of it now.

During the first two and a half weeks there was dulness on percussion over the left lung posteriorly, and tympanitis anteriorly. I think the rapid pulse may be explained by displacement of the heart, possibly the effusion forced the heart upward, and thus interfered with its action. The elevation of temperature must be explained upon some other hypothesis; possibly it was due to the slight infection which occurred in the superficial wound of the arm, but this seems hardly probable.

The surgeon who examined the child stated that it might become a surgical case later, but advised against the invocation of surgery unless more indicative symptoms developed. No operation became necessary.

The case is of interest in that pronounced dyspnea appeared immediately after the injury; the extensive variation of temperature and pulse; that this great amount of fluid should be taken care of by the system, and that there was practically no external evidence of injury to the chest.

THE PROVISION OF MEDICAL TREATMENT AT INFANT CONSULTATIONS; OR, THE SCOPE OF THE INFANT CLINIC*

BY HELEN Y. CAMPBELL, L.R.C.P., L.R.C.S. Edin., L.R.F.P.S., Glas.
Medical Officer, City of Bradford Infant Clinic

The Municipal Infant Clinic might, I think, be called the latest phase in the evolution of practical measures for the preservation of infant life.

We are now more than ever alive to the national menace, not only of a steadily diminishing birth-rate, together with a high infant death-rate, but of an even higher infant deterioration-rate, the results of which, in school and adult life, are becoming daily more clear to us. Hence it is that we find the economist, the humanitarian and the scientist at once in insistently warning us of the urgent need for and economic value of preventive work in this direction, and that infant welfare schemes are found in operation, and rapidly multiplying, throughout the country. For the most part these would seem to have concentrated almost entirely upon the factor of maternal education, in accordance with views based upon the great unchangeable law, that the mother is the guardian and controller of the destinies of infancy. Observations and experience, however, tend increasingly to convince one that the scope of maternal responsibility is strictly limited in that large section of society which chiefly furnishes the need for an infant-life preservation campaign: that it is limited not by maternal indifference nor by the existence of maternal ignorance, which can be overcome, but by social and economic conditions which in the meantime cannot be. It would seem therefore that we as a nation must do more for the infant, must assume some of the responsibility in order to enable the mother to bear her share.

An infant by comparison with the young of other animals is so peculiarly helpless in its dependence upon the conditions ruling in its environment that it is necessarily especially susceptible to adverse influences in this. Hence a baby's struggle for existence is a very real one. The working-class baby starts out on a very specially keen struggle for existence—a comparison of the average working-class home with that of the more favoured classes sufficiently establishes this fact.

*Read before the National Conference on Infant Mortality, Liverpool, July 2 and 3, 1914.

The most practical scheme for the preservation of infant life would therefore seem to be one which early seeks out these infants less favorably placed, and by continued supervision secures to them, so far as possible, these conditions which are essential to their proper development. Of these the first two are, undoubtedly, proper nourishment and early and skilled medical attention; these lacking, and particularly the first, the infant succumbs, or survives bearing lasting scars.

Such a scheme to be effective must be universally applied, must be directed by experts in the field of infancy, and administered by the local authorities, since these bodies alone possess the necessary powers and machinery essential for the work and its co-ordination with other departments benefiting and safeguarding child life. We have, I believe, in the properly equipped Municipal Infant Clinic, with home visitation and kindred activities, and serving each working-class district, the best means at present of effecting this work.

The Health Committee of the Bradford City Council established their Infant Clinic in June, 1912. It is staffed by two whole-time physicians, six whole-time nurses, and a whole-time dispenser, exclusive of minor officials, and is open all week-days (save Saturday afternoons) from 9 a. m. to 6 p. m.

The infants reach us largely as the result of the invitation of the women inspectors visiting on notification of birth and other house visits, also by recommendation of midwives and of mothers attending, and many "old mothers" are now coming up with their new babies. The vast majority of the infants are registered within the first three months of life, many within the first month. With the municipal ideal of preventive work in view, the youngest infants, the illegitimate and other nurse-children, the premature babies, and all bottle-fed babies are especially welcomed. The number of infants on the register is now 3,302; the usual weekly attendance is well over 500, and the total number of consultations held up to date is 34,505. The primary aim of the institution is the systematic medical supervision of infants during the first two years of life.

Each infant is examined by the physician at its first visit, and those presenting any abnormal symptoms at any time; whilst healthy babies are periodically examined, and during the interval between these examinations are under the care of a specially trained and experienced nurse.

An isolation room adjoins the waiting rooms, and into this the nurse maintaining a supervision over the waiting rooms ushers all suspicious cases or cases from infectious homes. The attendance of children over one year of age introduces a larger element of infectious disease, especially measles, and babies suffer commonly from whooping cough and not inconsiderably from measles.

Detailed and comprehensive records are kept of each infant. Weights and measurements, particulars of the infant's home, family history and economic conditions, its previous history and its present condition, together with all advice given. are entered on its "record card," and fresh entries are made on this card at each attendance. Such records must furnish much needed statistical material concerning infant life.

We concentrate especially on the nutritional question, which experience proves to be the most essential consideration in the care of infancy, and the whole time of one nurse is expended in instruction and demonstrations to mothers in this department.

A very large proportion of infants come to us either wholly or partly artificially fed (of the first 1,523 babies registered 912 were so classified); and of these "bottle-fed babies" a large number come to us suffering from some form and degree of nutritional disorder consequent upon unsuitable feeding.

Failure of the breast-milk secretion is the reason for the artificial feeding in the majority of cases. Fresh milk, dried separated milk and oat-flour are given to all necessitous nursing mothers, in order to enable the largest number to be breast-fed.

Each bottle-fed infant attending the clinic is given a separate feeding prescription by the physician, for the food adapted to its individual requirements, and to meet these we stock a variety of aids to infant-feeding. No printed instructions on the artificial feeding of infants are issued, as we are emphatically of opinion that the food must be prescribed individually. and that by any other method much harm is done. With the opening of our new premises the prescriptions for infants fed on cows' milk will be made up in the milk laboratory. Experience has convinced me that the proper home modification of cows' milk is, among the really poor, both unsafe and impracticable. The milk laboratory—using the word in an extended sense—makes available the only scientific and safe method of artificially feeding infants of this class.

There are two essentials in the artificial feeding of infants on cows' milk, of which the significance in the work of infant-life preservation cannot be too well understood—

(1) Pure and cooled milk, so far as possible in its live and natural state.

(2) Modification of this milk so as to bring the relation and proportion of its ingredients into correspondence with the infant's natural food.

This can only be done in a laboratory, or well-equipped home, where whey, separated milk and cream can be provided, and combined to meet the individual requirements of the infant. Such a laboratory (including the provision of other foods and aids to infant feeding in special cases) is further an essential inclusion in an infant clinic for the efficient treatment of the many nutritional disorders which present themselves. The Bradford City Council has initiated a great and noteworthy reform in its provision of a scientifically equipped infants' milk depot.

The infants' food is provided free in all necessitous cases. This is an essential provision in the work of an infant clinic and is in many cases a life-saving measure. Careful investigations into the economic circumstances of each infant, and its "following-up" or efficient home visitation, to ensure that the directions given are put into practice, will prevent the possibility of abuse.

The incidence of respiratory disease among the infants in Bradford is high, and as we found that it was practically impossible for the mothers to obtain suitably designed warm infant clothing, particularly at prices within their means, we stock at the clinic all necessary garments, made to our own pattern, and other infantile necessities. These we retail to the mothers at cost price, a necessary system of paying by instalment being also in vogue in this department.

The nurse in charge of the "undressing-room" and of the above stock finds ample opportunity during the dressing and undressing of the infants for the teachings of baby hygiene, pointing out undesirable conditions, and since she deals individually with the mothers, adapting her advice to their individual resources.

While the educational aspect of the work is an important consideration at the clinic, we have no classes or collective teaching of any kind, as we believe it to be impossible to combine thorough and properly administered infant clinic work with systematic formal instruction in mothercraft. The establishment of quite separate but co-operating schools for mothers, staffed by those whose training and aptitude specially fit them for the work, must be a most desirable measure.

The educational aspect of the clinic, so far as the assistants are concerned, is a factor which can never be lost sight of. Each official on her appointment finds that she has entered upon a specialized field for which her previous training, while an asset, has not qualified her, and therefore that she must learn. This point was, I believe, insistently made at the great Infancy Conference held in Berlin not long ago, and the practical recognition of the fact that infancy forms a very specialized field, and that well-equipped institutions for the practical training and certification of all prospective workers in it are urgently needed here, must, when it comes, greatly strengthen the campaign against infant mortality.

A most essential part of the work of the Infant clinic is the "following-up" or systematic home visitation of the infants by the women inspectors. By a system of exchange of cards it is possible for the clinic to be kept informed of the results of the visits of the inspectors to the homes, and for those visiting to be kept informed of the observations and advice of the clinic.

We have a dispensary in charge of a fully-qualified whole-time woman dispenser. Adjoining it and the consulting rooms we have a "treatment-room" where all treatment necessary for the infants is undertaken, including that of cases of discharging ears which, with abnormal conditions of the nose, are exceedingly common ailments among the infants. Here also the mothers are instructed practically and largely by actual demonstration in the nursing or home treatment required by any case, such as the giving of medicines, the method of application of various dressings, inunctions, fomentations, massage and other home treatment of rickets, the wrapping of premature infants in wool, and the home treatment of ears, eyes, nose, etc.

In this room, also, an infant coming in critically ill is temporarily "warded" during the clinic hours, and thus kept under medical observation and carefully nursed until the crisis is passed. Many urgent cases of convulsions and "collapse," etc., have been in this way successfully dealt with. We have also in connection with this department a medical loan system whereby rubber ear syringes, apparatus incidentally necessary in connection with lactation, bronchitis-kettles, and other articles, all sterilizable on return, and otherwise unobtainable by poor mothers, are lent to those in need of them. Thus, sick infants receive all necessary medical advice and treatment.

Much controversy has arisen over the question of the provision of medical treatment at infant consultations. It is argued that their work is preventive and should seek by maternal education in the laws of hygiene to prevent infantile disease. To this argument one would reply, speaking from experience, that in the campaign against infantile mortality and disease the provision of medical treatment is essential and its work preventive in the highest degree. It is under present conditions a practical impossibility for the infants of the poor to enjoy the proper hygienic conditions of infancy, and hence ailments are rife which, in many cases, no maternal skill can prevent.

Of the first 1,523 babies handled at the institution 808 were ill and seriously in need of medical treatment on registration. All minor disorders were excluded in this classification, and the figure does not represent the various ailments from which these babies suffered during their attendance. It is, in fact, not generally realized to what extent these babies ail, owing, I believe, to the many adverse factors in their environment, and not, in many cases, to any innate "unfitness."

For most of the infantile ailments, and sometimes for worse, the working class mother consults no doctor, and relies upon home treatment of the chemist. This is not always a matter of ignorance but of economic necessity and stress. It is not realized in how large a number of cases poverty excludes the possibility of paying even a small and inadequate fee. When the child is under the regular supervision of the clinic and the mother understands that no home "dosing" is allowed, all the ailments arising, such as teething disorders, constipation, cough, indigestion, skin eruptions, discharging ears and eyes, restlessness, nervousness and sleeplessness, and early failure of nutrition, etc., are early detected and properly dealt with, and by so doing, much more serious disease is prevented.

To sum up. At the Municipal Infant Clinic the baby is systematically under the care of a physician who has an exceptionally thorough knowledge, not merely of its own life history, but also of the mother and of the home conditions and financial resources. There is time and opportunity at the Infant Clinic with its specialized equipment for the treatment of infantile disease, to go thoroughly into each case and its attendant circumstances, and to make the mother understand what is necessary. Nutritional cases can be treated over the long period necessary, the mother can be instructed, and, when poverty-stricken, can be supplied with the special food required. All this careful provision cannot be made at the hospital out-patient department, or at an ordinary dispensary, or by any general practitioner.

Infants suffering from congenital specific disease can be detected early and given the essential prolonged systematic treatment which the vast majority of them do not otherwise receive at all, since they remain under the supervision of the clinic during the whole of the first two years of life. The incidence of this disease among these infants is very high, and as it is a large factor in infantile mortality, and even more in deterioration, it is one which must receive considerably more attention than it has done in the past. Under no other circumstances can this disease, so far reaching in its consequences to the individual and the race, be so certain of detection and so suitably brought under treatment as during this period of supervision at the infant consultation or clinic.

Separate "treatment centers" analogous in function to the school clinic, to which all sick infants would be referred for treatment from the infant consultation, have been suggested. Such, I confidently believe, are not the best solution of the problem, since they could never serve the interests of the infants so efficiently as the provision of medical treatment at the infant consultations themselves. At the infant consultation or clinic, or that center maintaining the continuous medical supervision of the infant, at each revisit the baby's whole life comes, or should come, under review. In the comprehensive work here undertaken no one aspect of the child's life-history and environment can be neglected, and the several factors of its feeding, clothing, its record of weight and measurement, and the various stages of its development, its mother or "nurse-minder," its family and its family income, must all be taken into consideration no less than its condition of health or illness as the case may be. It is obviously the physician possessing such a full and intimate knowledge of the case, and having its record at hand, who can most successfully deal with it when it varies from the normal, and it is this "doctor's" advice which the mother will prefer.

Further, the question arises, what is to be defined as a "sick infant?" These infants are liable to many "ups and downs," which often could not be called illnesses, and yet require early treatment for the prevention of more serious evils. Nutritional cases require, chiefly, suitable food, or advice regarding feeding and body warmth, etc. Gastro-intestinal diseases require essentially dietetic regulation, which is also frequently necessary in addition to medicinal treatment in the case of bottle-fed infants otherwise ailing. Infants suffering from congenital specific disease are not always obviously ill, though urgently in need of prolonged medical treatment.

For those infants requiring skilled nursing and institutional treatment infants' hospitals are badly needed. A beginning has been made in Bradford by the provision of a small infants' hospital with accommodation for twenty infants, in the specially designed and recently completed new building which includes the infant clinic and the milk depot.

A well-equipped bacteriological laboratory should form an essential part of every infant clinic. The examination of infants' stools, blood, aural discharges and other pathological material is urgently needed, not only as a guide to the best method of treatment of many of the common diseases of infancy, but as a means of valuable research into those fields which are dark or but dimly lighted at present. Such a laboratory we hope shortly to have available.

SANITARY MILK AND HOW TO GET IT*

BY R. W. ARCHIBALD, V.M.D.
City Dairy Inspector, Winona, Minn.

The physician is perhaps the most important factor in educating the general public in a demand for cleaner milk. When the majority of the people demand reforms and improvements along any line they are bound to come and when people really want better milk they will get it. The only reason we have not had better milk in our cities in the past is because the community as a whole did not interest itself sufficiently to demand it. Formerly all the consumer asked of his milkman was that the fluid be white, have a cream line and a good cowey taste, the latter being mostly due to dissolved cow ma-

*Read before the Winona meeting of the Southern Minnesota Medical Association, August 21, 1914,—St. Paul Medical Journal.

nure. Today it is a matter of common knowledge that many serious diseases are conveyed through milk, the most important of which are tuberculosis, scarlet fever, diptheria and diarrheal diseases in children, especially during the summer months, and certainly along these lines, as regards prophylactic treatment, the medical fraternity, as a whole, has a vast amount of work to do. Some members of the profession are doing unselfish and untiring work in this direction, but I hardly think it true of the profession as a whole, and could they be secured an agent of superior worth would certainly be at hand with all ability to properly place this issue before the consumers.

The work as dairy and milk inspector in Winona, to which I was assigned a year ago, consists in applying the tuberculin test annually to all herds supplying milk to the city. Also in inspecting all dairies, depots and stores where milk and cream are sold and in testing and examining milk to see that it is kept up to the legal standards at all times.

Working on the basis that milk and dairy inspection is an educational matter and not a police duty, which is the exact reverse of the policy that had been followed here for the previous five years, and, judging from the present conditions, I feel that I certainly labored along the right lines.

During the fall and winter months the work consists principally in applying the tuberculin test to the various herds—about 1,000 head were tested and out of this number less than 4 per cent were found to be affected. This rate as somewhat lower than the average for the state.

About twenty-four hours are needed to make the test, the greater part of which time is spent on the dairy farms. I was thus able to note exactly the methods used on each dairy, paying particular attention to the customary routine at milking time, making suggestions and recommendations as the conditions presented themselves in each individual case.

It might be well at this time to say something about the tuberculin test. The subcutaneous or thermal method used is the only test endorsed and recommended by both state and government authorities and is considered accurate in 95 per cent of cases. The United States Bureau of Animal Industry furnishes tuberculin to inspectors free of charge and a copy of each test is mailed the bureau for approval.

Condemned cows are quarantined and killed under federal inspection. The state reimburses the farmer two-thirds of the value of the condemned carcass, the total amount to be paid being limited to $60 provided she is not a full blooded animal.

Much has been said in regard to the physical symptoms presented in cattle affected with tuberculosis. Most dairymen and many others have the idea that a cow must be thin in flesh and have a sick, unhealthy look in her eye, as they term it, in order to be tubercular. This is entirely wrong for often the animal presenting the most healthy appearance physically may be affected for a matter of a year or so with open tubercular lesions of the udder before anything abnormal is noticed.

Pathologists tell us that in the majority of cases of tuberculosis where the bone is involved, and especially in children, that the bovine and not the human type of the bacillus is present. Right here I would suggest that where cases like this present themselves and the family history shows no traces of tuberculosis, that the milk supply be investigated at once.

During February Winona's dairies were scored by a state inspector for the State Dairy and Food Commission. The score card used is the one recommended by the federal authorities and we had an average of 62, the highest being 82. This average compares favorably with any city in the state and Inspector Hallquist in his official report to Commissioner Winkjer said in part: "The dairies supplying milk to Winona are in a class by themselves."

In a special four-page supplement both Winona daily newspapers printed the complete results of the scoring done by the state inspector with his personal comment on each dairy together with views of the various barns and milk houses. Hereafter the scoring of the dairies will be carried on annually. This year to stimulate improvement and show the farmers that the general public is really interested, the Winona Association of Commerce has offered to contribute six prizes ranging from $10 to $25 to the three dairies having the highest score and also to the three dairies showing the most improvement over the last year's score.

Undoubtedly this system of scoring has done more than any other one thing to improve the general conditions in our dairies. In several Eastern cities where it has been carried on, the second year's score in all cases showed an improvement from 10 per cent to 20 per cent and all indications at this time point to a still greater improvement here.

To give you some idea of the amount of improvement going on, four new modern dairy barns and nine new milk houses have been constructed since spring, five barns on dairy farms have been completely remodeled and I feel safe in stating that by fall the majority of our barns will have the King system of ventilation and the required amount of window light.

Both the state inspector and myself, in all our visits to dairies in this vicinity have laid special stress on the advantages of using the milk pail with a small top, but we found that it was almost an impossibility to get the dairymen started using them. Finally, as a result of our efforts in this direction, one of the largest local milk dealers decided to present each of the dairymen supplying milk to his depot with two of the improved type of milking pails upon agreeing that they, in return, would let him have two large mouth pails. The innovation became popular as its advantages came to be realized and soon other dealers made their producers the same offer. At the present time fully 90 per cent of the milk brought to the city is milked into the small top pails; and these pails are used reguraly twice daily—a contrast to 12 months ago when a visit to the dairies showed only seven of these pails in use.

To those not fully acquainted with the advantages of the small top pail it might be well at this time to bring out a few fects in regard to them. The use of the small top pail is the simplest and most economical method of securing clean milk. Any authority on sanitary milk will agree with me in stating that from 75 to 90 per cent of the dirt that gets into the ordinary large-mouthed pail will be kept out by using the small top pail and ordinary cleanliness.

Investigations in our larger cities have shown the bacterial count to be from 30 per cent to 40 per cent lower in dairies where this pail was used, for the contaminating material is kept out rather than being strained out later minus the germs by the use of cotton or a clarifier.

When once the producer actually sees how much filth falls into the common milk pail as compared to the small top pail, that man is immediately started along lines of sanitary milk production. A visit to any of our dairies at milking time and a conversation with the milker will convince one that the above statement is true.

During the summer months special emphasis was laid upon the proper handling of milk. Letters were sent to all the dairymen with instructions in regard to the proper method of cooling, storing and conveying on the trip to town. Everywhere we tried to impress upon them the importance of these three things: To keep milk clean, cool it quickly, keep it cool. Contests were conducted at the various milk depots in the city throughout the month of May. At each depot a prize of $1.00 was awarded each week to the producer who brought his milk was awarded each week to the producer having the cleanest sediment test, and the producer who brought his milk in and delivered it at the lowest temperature. The temperature was taken daily as the milk was delivered and the sediment test was made on some day during the week. Results of these tests were posted in a tabulated form at all depots and also printed in the daily newspapers. In this way each man could learn exactly how his milk compared with that of other producers. There was keen competition for the prizes so offered and there was great improvement in both sediment and temperature. During the week before the contest started the average temperature at one depot was 62 degrees. Since then it has ranged from 46 degrees to 52 degrees. One has but to see the results of the sediment test to become convinced of what a little special care together with the small top pail will do towards providing clean milk.

Next to the scoring of dairies the sediment test has been the most valuable aid in our work. By it a pint of milk is filtered through a cotton disc about an inch in diameter, the dirty sediment, consisting of hair, manure, flies, scabs, etc., remaining on the cotton. In this way we were able to show each producer the exact condition of his milk, how it compared with his neighbor's, and what he was neglecting to do in allowing his milk to become so dirty. One of the best ways of reducing the amount of sediment in milk is to convince the producer, as this test does, that his milk contains sediment, then showing him that by just exercising a little more pains, it is easy to produce milk containing little or no sediment.

During July an investigation was made of milk as found on the various wagons. A pint was taken from each rig, the temperature taken and the sample brought to the laboratory, where the butter-fat content was determined and a sediment test made. Each Saturday a list of the dealers whose milk was in Grade A was published in the newspapers. Following are the averages for these tests: First week, average temperature, 47 degrees; butter-fat, 3.8 per cent; the sediment, with but one exeception, was good. Second week, average temperature, 45 degrees (note the exceedingly low temperature);

butter-fat, 3.7 per cent, sediment good. I have the results of the last tests showing a sample of milk taken from every dealer, with the temperature, where the sample was collected, the butter-fat content and sediment test. Along with this sample are three that I obtained a year ago at thit aime. The extreme contrast in cleanliness cannot help being noticed.

During the week of August 9th, the State Board of Health made a bacterial count of our milk, obtaining samples on the farms, at the depots and from the rigs. The results are as follows: Seventy per cent of the samples gathered at the dairies gave a count of less than 10,000; 38 per cent of the milk delivered the following day at the depots showed a count of less than 10,000 and 42 per cent of the milk collected on the wagone about town gave a count of less than 100,000; 25 per cent less than 50,000.

One diary, which the inspectors informed us was as completely equipped as any in the state showed a count of 1, 00 after being delivered at the depot in town. Nothing has been done in the city in regard to pasteurizing milk for with the product in the condition we are getting it this process scarcely seems necessary. Pasteurizing milk here would be doing the same as the man did who received a telegram stating his mother-in-law had died, asking: "Shall we cremate or embalm her?" He answered: "Make sure, do both." To the outsider it seems that one done well would have been sufficient; and the other a needless expense.

All of our dealers are well equipped with apparatus for sanitary washing and sterilization of milk bottles, for, with but two exceptions, all dealers that bottle milk have a complete steam outfit consisting of boiler, turbine for washing, and arrangements whereby live steam is turned directly into each individual bottle.

Again, it would appear that with all this, pasteurizing, unless conducted at a municipal pasteurizing plant could in no way better our milk.

SOCIETY TRANSACTIONS

REPORT OF THE SCIENTIFIC PROCEEDINGS OF THE THIRTY-SECOND ANNUAL CONGRESS OF THE AMERICAN LARYNGOLOGICAL ASSOCIATION

Held in Atlantic City, New Jersey, May 25-27, 1914.

The Influence of the Nose on Eye Affections as Evidenced by a Case of Bilateral Blindness and one of Unilateral Scintillating Scotoma Cured by Operations on the Ethmoid Cells.—By Hanau W. Loeb, M.D., St. Louis.—Case 1. was that of a boy who was practically blind, the vision being reduced to 1-192 on the right side and 3-120 on the left side. The sight had been gradually failing for three weeks. This was accompanied by severe supraorbital headache. Exenteration of both ethmoids was followed by complete restoration of vision within one week, improvement being gradual from the time of operation.

Case 2. was that of a girl sixteen years of age who had been suffering for two years from daily attacks of severe left-sided headache, with what she described as flashes appearing in her left eye. These attacks lasted for about five minutes, coming on without any apparent regularity during the day, and without any cause ascertainable on the part of the patient. Exenteration of the left ethmoid resulted in complete cure, the patient having suffered with only a mild attack on the day of the operation.

Dr. Loeb thinks that these cases, in which the ethmoid and not the sphenoid was at fault, may confirm his investigations on the anatomy of this region, to the effect that under ordinary circumstances the optic nerve is in close relation with the ethmoid labyrinth only at the postero-external angle of the last posterior cell. Where this relation exists, there is only the slightest possibility of any danger to the optic nerve in suppuration confined to the ethmoid cells. But when the last posterior ethmoid cell replaces the sphenoid, the optic nerve runs close to and along the external wall of this ethmoid cell (as in two out of thirty specimens studies), and the vulnerability of the nerve is correspondingly heightened in view of the greatly increased portion exposed.

DISCUSSION

Dr. Joseph H. Bryan, Washington: In my experience it is the posterior ethmoid cells which are most at fault at the juncture of the sphenoid, or the posterior ethmoid cell operating of the optic nerve as it comes through the canal. These cases where the wall between the sinus and the orbital cavity is very thin, naturally may be due to some pressure effect, but when distinctly situated, with considerable bone between the cavity and the nerve it is rather difficult to explain, unless due to toxins, and it is my belief that there is some transmission of the septic matter to the nerve tissues which brings about these changes.

Dr. John F. Barnhill, Indianapolis: In a study of this question I came across a specimen which was unique. I could well believe that anything could happen to the optic nerve in a case of ethmoiditis posterior in such an instance. The specimen shows that the whole optic canal runs as would a sewer drain run through the ground. It is attached at the base of the cell, and with three-quarters of the circumference of that osseous tube runs directly through. It seems incredible, looking at the very thin bone which surrounds the bones throughout this half-inch in length, that if this cell were filled with pus and the drainage impeded, such an eye would not be affected in some way, as Dr. Loeb has explained.

Dr. B. Alexander Randall, Philadelphia: I have seen a good many of these cases, some of them of great interest; but all of these where the scotoma was scintillating, I have seen to be distinctly toxic in type and not dependent on anatomic relations. I have seen the blindness and fixed scotoma quite marked with marked swelling of the optic nerve.

Dr. Hanau W. Loeb, St. Louis (in closing): Ethmoid disease is more common than sphenoid disease, and when the latter sinus is affected the ethmoid is also, especially in the acute conditions. I found in these anatomic studies that this last posterior ethmoid cell at its postero-external angle came the nearest to the optic nerve. Knowing, as we do, that the orifice of that is low down and almost always empty of pus, with that slight relation it would not affect the nerve to any considerable extent, even if it is possible for the nerve to be affected by nearness. However, in two cases out of the thirty specimens, this nerve, instead of having that relation on account of the ethmoid cells being pushed back over the sphenoid, ran along the posterior ethmoid cell and along its lower portion and was in a far more vulnerable position than before. Onodi has ascribed to the toxic condition the cause of optic troubles, or to the veins. Toxic conditions can act more accurately under these conditions than when distant. The anatomic relations of these structures have shown that this condition obtains.

Report of a Case of Septic Infection of Parotid Glands.—By F. E. Hopkins, M.D., Springfield, Mass. Structure and anatomic relations account for the prominent symptoms attending great swelling of the parotid gland. Each intralobular duct is a branch of a subdivision of the main duct, so that if a septic infection results in closure of these ducts, drainage is impossible and dissection of the gland becomes necessary. Many important vessels and nerves, including the facial, traverse or originate within the substance of the gland, making dissection difficult and dangerous. The gland lies in contact with internal jugular vein and internal carotid artery and the pneumogastric, glossopharyngeal and hypoglossal nerves; and pressure of the distended gland causes corresponding functional disturbance. Suggestions for treatment are early probing of Steno's duct and efforts to reduce inflammation, which failing, dissection of gland becomes necessary.

DISCUSSION

Dr. Henry L. Swain, New Haven: Dr. Abbe stated in New Haven recently, in speaking of the treatment of tumors by radium, that he had one case without recurrence after five years. It has occurred to me since I have been using suspension laryngoscopy, that we have in it an admirable method of exposing these papillomata over long periods to radium. The patient is hung up with an anesthetic, and kept so comfortably for so long a period that we can radiate them at our pleasure. Dr. Mayer exhibited patients under suspension laryngoscopy. The other day I had a case hung up for over an hour with insufflation anesthesia through the nose, breathing perfectly and without any after-discomfort.

Dr. D. Bryson Delevan, New York City: Radium is especially applicable to superficial growths, and papillomata of the larynx are very frequently of this class, and should be susceptible to relief from the use of radium.

Without some such help as suspension laryngoscopy, it is practically imposible to make an exposure of the radium for sufficient time to answer the purpose. I have had under observation for six or seven years a little girl, a case of Dr. Abbe's, whom I began to treat with him when she was about five years of age. I refer to the case, not because it has been an inveterate case of papilloma, but because the radium has not been as effective in this instance as in almost every other case I have seen, and I would particularly refer to one result—not of the radium treatment, but one which has followed in the case perhaps from influences due to the growth itself—that is, the distinct contraction, especially of the epiglottis; a contraction so marked as to be quite unusual. There still remains a large mass of papillomatous tissue at the base of the epiglottis, and the child still is able to breathe most of the time through the mouth, but is occasionally forced to resort to the laryngeal opening, which is kept packed. The contractures which have arisen are worthy of attention.

Dr. Frederick E. Hopkins, Springfield (in closing): I think I may fairly say that my conversation with Dr. Abbe makes me feel one can speak much more positively about the efficacy of radium than I felt warranted in stating from my own experience in my one case. He has used it for fully ten years, and has many cases of undoubted cure. The woman referred to, who was treated so long, has since died, but she lived for three years after the application of radium, dying with pneumonia, I believe, and during that period of three years she breathed comfortably, with no recurrence of the growth.

The Relation of the Tonsil to Thyroid Disease.—By Burt R. Shurly, M.D., Detroit. For some mysterious reason there exists in the state of Michigan an area in which there is an increased percentage of cases exhibiting disturbances of thyroid secretion. It is obvious that the physiology of the thyroid and other ductless glands is profoundly affected by toxic disturbances in general, and particularly those that enter by the lymphoid ring. The author has noted beneficial results after a tonsillectomy in patients who had incipient Graves' disease, thus adding another definite indication to surgical procedure.

When the routine examination of the nose, throat and ears includes the cervical and postcervical glands, thyroid and thymus, it may be possible to abort an incipient Graves' disease or pulmonary tuberculosis.

In moderate or severe thyroid insufficiency you may find a dry mouth and throat, with dyspnea on exertion. Voice husky or thick, defect or change in speech. Mucous membrane of upper air passages may be swollen or dry. Laryngeal muscles may show insufficiency. There may be perversion of taste.

Later in the disease hemorrhages from the nose, throat or lungs are common.

Treatment of the thyroid condition is indicated, but if improvement does not follow upon medical treatment, operative interference should not be postponed.

In all cases of thyroidism an examination of the nose, throat and ears is essential.

DISCUSSION

Dr. Greenfield Sluder, St. Louis: I have started observations in the Children's Hospital in St. Louis, and a considerable number of children have been studied as well as adults, by me, in which there seem a clinical relationship between the lymphoid ring and the thyroid gland. The development of this district is by no means clear in the minds of anatomists. Just exactly what parts the various sections of the lymphoid ring develop is not settled. That the lingual tonsil develops from the same bronchial arch of the thyroid is a fact, and in early fetal life there exists the thyroglossal duct, which is closed before birth. It is sometimes found in the dissecting room. I have many times sought for this duct in the living, but have not found it.

Dr. Shurly reports a singular betterment by the removal of the faucial tonsils. My observations have been relative to the lingual tonsil, and in one case in which I did a perfect tonsillectomy some years ago, I found a goiter this winter. The treatment in that child with a lingual tonsil resulted in marked shrinkage of the goiter, which was a simple hypertrophy. I have a considerable number of adults under observation, one young may of probably twenty-five, with an enormous adenoma in his neck that in the course of three months has shrunk some three-quarters of an inch in circumference. The gland is softened and the sense of comfort is greatly increased. That is the type of simple hypertrophy. Of hyperthyroidism I have had five cases. In four there was marked improvement by applications to the lingual tonsil. One was a case of long standing, operated on once or twice, in a woman by no means intact otherwise, who has so far not been improved. In another case of high grade striking exophthalmos and moderate adenoma, with a sense of impotency and general nervousness and tremor to such an extent that the patient was unable a short time since to feed herself, in that woman the first application to the thyroid gland was followed by a sense of betterment which she described as less tension. In the other cases under observation the thyroid has softened and shrunk, and in one very distinct and another less distinct has the exopthalmos receded. In one case in a child I saw the thyroid swell over night as the result of laryngeal tonsillitis; the tonsillitis got well, and in a few days the thyroid returned to normal size.

With regard to the application, it is silver in varying strengths up to a saturated solution, and salicylic acid in alcohol in saturated solution.

Dr. George B. Wood, Philadelphia: The relation of tonsillar infection to the production of hyperthyroidism was first called to my attention by Dr. Musser, with whom I saw a number of cases. One case in particular was that of a trained nurse who had recurring tonsillitis and exopthalmic goiter and hyperthyroidism following tonsillitis. The removal of her tonsils stopped the attacks for six months, and her goiter began to go down and the exopthalmos disappeared. At that time she had slight sore throat, followed by a less severe attack of hyperthyroidism, and after this attack I found on examination that at the operation I had not completely removed the faucial tonsils, there still being a piece in the upper part, removal of which has cured her and she has had no more attacks.

I have seen a few other cases. The thought in my mind was not of the relation of the lymphatic ring directly with the thyroid gland, but rather that we had an infective process originating in the ring which upset the metabolism, and that was also the view Dr. Musser held and he believed that almost all goiters and all cases of exopthalmos with goiter were more or less associated with some form of cryptogenic infection, and that if such infections could be located and removed, the results would be good.

Dr. Henry L. Swain, New Haven: I have long associated the two things together of the connection between the hyperthyroidism and the tonsillar ring, but I had only put them as occurring in the same individual and that any infectious process in a patient with Graves' disease would exaggerate the symptoms. I have known this to occur with antrum disease, with lingual tonsils, and inflammation of the lateral columns of the pharynx. This I say in spite of the fact that there are numberless cases which must have occurred to all of us in which the relation was established in this way—that in patients treated for lingual tonsil affections we find they cannot wear a tight collar when there is an acute exacerbation of the lingual tonsils. I had not thought that they were directly connected and that any phenomenon of internal secretion could exist between the two conditions.

Limitations of Bronchoscopy.—By Chevalier Jackson, M. D., Pittsburg. After a long series of successful bronchoscopic foreign body removals one is apt to think there are no limitations to bronchoscopy. The author had had five failures, one of which he excluded because he alone had bronchoscoped the case and permission for a second bronchoscopy had been refused. The other four cases had been attempted by two or more other bronchoscopists, and therefore might be said to define the limits of bronchoscopy. The limitations of bronchoscopy were reached in the inability to find a small foreign body far down and far out at the periphery of the lung rather than in a failure to remove when found. The limitations in a particular case could not be said to have been reached until bronchoscopy had failed at the hands of at least two bronchoscopists of experience. Then thoractomy should be done immediately, without waiting for pus formation. In his own cases the author would not feel justified in advising thoractomy until another bronchoscopist besides himself had failed. Waiting for a foreign body to be coughed up was inadvisable, because, as shown by Delavan, even after expulsion, death had followed from disease meanwhile set up.

DISCUSSION

Dr. Cornelius G. Coakley, New York City: With regard to the case of 1908, referred to, this woman had held a pin in her mouth; it was one with a white bead head and was about an inch long. She also had a very large goiter which had compressed and dislocated the trachet so that it was practically impossible to pass a bronchoscope down to the trachea. We could not use force enough to pass it below the compressed area of the trachea as far down as the bifurcation. A tracheotomy was done and then a subsequent attempt was made to get the pin; the patient coughed and I lost the pin, which went down further with the point up, and although I was able to see it I was later unable to get it. Dr. Jackson did not even see the pin. I think there is no question that had the modern methods of lung surgery with the intratracheal anesthesia been then developed, it would have been a perfectly safe and probably successful procedure in removing this pin. This attempt took place in about the first three weeks of the involvement. Dr. Jackson, in his modesty, did not tell you of another case Dr. Jackson very kindly came to Rochester about two years ago to see my sister-in-law, who had inhaled a piece of orange peel through the larynx into the trachea, and developed soon after a very severe irritating cough and bronchitis, forgetting all about the original cause until about two weeks after the accident, when the physician discovered this localized bronchitis and could not understand why it was localized until he gave this history. Moreover, the fact that on two or three previous occasions some similar foreign body had been taken in during the process of mastication, coughing and inhaling, and each foreign body had been expulsed within a few hours or two or three days after the accident. A radiograph showed considerable involvement of that side of the lung, but air could get in. After a physical examination Dr. Jackson decided, although there was nothing showing in the radiograph, not to do a bronchoscopy. The patient developed an abscess there and a bronchiectatic abscess or abscess of the lung, and discharged pus in great quantities and lost fifty or more pounds in weight during the next six months. The sputum showed no evidence of tuberculosis. She made a good recovery after a year of suppurating process in the bronchus or lung about this bit of white skin from the peel of the orange. If Dr. Jackson had gone down and done a bronchoscopy, in all probability with his skill he would have found that piece of skin and removed it and saved the patient the following dangerous, but fortunately not fatal, condition.

Dr. Thomas Hubbard, Toledo: With regard to the limitation of bronchoscopy, this may often be established by the patient. Nothing is so exasperating as not to have your patient's support and that of his physician. Dr. Jackson will corroborate me in saying that secondary operations are very difficult ones without the full support of the patient and attending physician. On the other hand, occasionally the support of the patient is a factor in success. I recall a case of a woman who had a fragment of dental cement in the lower right bronchus, and one of these radiograms reminds me of it; it was located about the ninth rib posteriorly, with some months of ulceration, abscess formation, and all symptoms of tuberculosis. This woman's intuitive conviction that she had a foreign body there saved her life. Although two or three radiographs showed nothing, she insisted there was something there, and finally a competent roentgenologist located it. The first attempt at removal was a failure; the abscess cavity was full of pus and debris, and I could not locate the foreign body; the second attempt was made with a stereoscope picture to guide us and we successfully removed the foreign body and the patient recovered. Following the first operation I told her we had failed, but she said: "Never mind, you will get it the next time." That courage inspired us to do our best, and we were successful.

I recently had another patient with an upholster's tack in the right lung, who had been worked upon four hours consecutively by a bronchoscopist under local anesthesia. He had literally soaked the patient with cocain and his courage never faltered. After four hours' trial he consented to another type of operation. This I deemed impracticable by the upper method, fearing laryngeal edema after such a prolonged use of the tube. So a low bronchoscopy was done and the foreign body was bound. The previous efforts had turned it sideways and made it very difficult to extract. I must say that I doubt if the upper method could have reached the point of that nail, because it was so far to the right, and it was necessary in the introduction of the tube through the lower wound to carry it off at an extreme angle to bring the tack into the tube.

Dr. Emil Mayer, New York City: I recall being asked to see a boy who had a tack in his right bronchus, which had been there for more than a year, in the Presbyterian Hospital in New York. It was quite easy to do the bronchoscopy, but I simply could not see any sign of this tack. The bleeding was profuse and put me in such position that I could not see any evidence of the foreign body, and I felt that here was one of the important rules to live by—"be sure you're right, then go ahead." It is possible if then I had known as much about using the powerful magnet as Dr. Iglauer has recently recorded, I might have been more successful.

In another instance, showing the difficulties of bronchoscopy, I was called recently to see a young infant of about thirteen months, who had inhaled an open safety pin. A picture showed the pin in the upper portion of the larynx, and the local physician thought he could get it out by doing a tracheotomy. He failed. A second picture showed the pin had slipped down into the bronchus. It was not a difficult thing to introduce the bronchoscopic tube through the opening the physician had made, but the baby's condition was poor and I could not find the pin; the child's condition becoming worse, I desisted, and a few hours later the child died.

Dr. D. Bryson Delavan, New York City: It is interesting to understand the limitations of bronchoscopy, but also to thoroughly realize what it has done for humanity, and we all recognize that it is purely an American invention. Dr. Horace Green was the first to promulgate this method of treatment. Before the days of bronchoscopy the inhalation of foreign bodies was necessarily fatal. I remember a case in the '80's at the New York Hospital, where a young trained nurse with pleurisy was placed in my hands and we aspirated the chest. When introducing the cannula, and just as we had it well in position and were about to withdraw the blade, the girl made a wild movement of the arm, drawing it sharply back so as to break the needle close to the body, and by the time we raised her arm the needle had disappeared. We said nothing about it; there was a rise of temperature, but the patient got well. I followed her about twenty years, during which time she carried on her function as a nurse in excellent health.

Another case was a young farmer, who inhaled a full head of barley. The accident was followed by violent pneumonia and that by abscess of the lung, which broke through the outer wall of the chest, and in coming away the head of barley was found intact. He survived all of this. Such results are extremely rare.

Dr. E. Fletcher Ingals, Chicago: I am very glad that Dr. Jackson has brought up this subject, and I hope he will in closing say something about the limitations as to time. Dr. Hubbard spoke of some one working for four hours, and this impresses upon me the necessity of having a final word on the time one may work on such a case. For my own part, I have felt that we ought not to work more than half an hour. When one feels the next second will be successful, he hates to quit; also when there is a good deal of secretion, you dislike to stop before you try once more. In some of these long drawn out operations, about nine-tenths of the time is occupied in swabbing and one-tenth in looking for the foreign body. If we say no case should be operated on for longer than one hour, we would not be far wrong; while half an hour is the limit in the majority of cases.

I have had my failures in getting out foreign bodies, and I have sweat blood over them. I have recently, as you know, written a short article on fluoroscopic bronchoscopy, which I think is going to be a great aid in certain cases. With foreign bodies which do not throw a shadow, we must still rely on ordinary bronchoscopy. When there is an abscess formation with much pus, it is often impossible to find the foreign body. When there is a stricture it is liable to be impassable. Fortunately, some of these organic substances will be coughed Fortunately. some of these organic substances will be coughed out, but I think that 90 to 95 per cent of people will die from foreign bodies in three or four years from various abscesses, usually multiple, unless the foreign body is removed.

Dr. William E. Casselberry, Chicago: These bodies do not always stay put in the lungs; they are moveable, some of them, and it may explain why some of them, such as collar buttons, etc., have not been found on bronchoscopic examination. This was illustrated in my practice by a large grain of raw corn, first in the bronchus of a very small child; the child was small, and I should perhaps have made a lower bronchoscopy, but I made an upper bronchoscopy, and although there was considerable difficulty in getting this tube through and in getting vision, it did go to where the skiagraph showed a spot which seemed to be the grain of corn, and this showed in four skiagraphs. In corresponded to a place where there was obstruction and density of air. I aimed for that spot with my very small bronchoscopic tube, and searched diligently, but found no grain of corn. Things were beginning to look very uncertain when on withdrawal of the tube, gradually and cautiously, just as my tube slipped out of the top of the larynx, the grain of corn popped into view beneath one vocal cord. In that position of the patient, with the head down, it had left its position in the bronchus and slipped up.

RETROSPECT OF CURRENT PEDIATRIC LITERATURE

Diseases of the Alimentary System.

Under the Charge of

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Treatment of Summer Diarrheas of Children.—F. M. Crandall M.D., states in Boston Medical and Surgical Journal that four general measures of treatment are indicated—mechanical, dietetic, hygienic, medicinal. At the outset mechanical measurer are usually indicated to clear the digestive tract of fermenting material. Stomach washing is rarely necessary, but should be resorted to if the child continues to vomit curds or food or sour and putrefying matter. Prompt unloading of the lower bowel by means of irrigation is very important. High irrigations are valuable until convalescence is thoroughly established. At the outset of an acute diarrhea all food should be prohibited, but water should be given freely unless it induces vomiting. Milk should be resumed with great caution and sometimes must be long withheld. As a rule a laxative at the outset is strongly indicated. Castor oil is usually the one to be selected. A saline may fulfill the requirements very well. When the stomach is irritable calomel in small divided doses is frequently the laxative to be chosen. The type of disease should influence largely the laxative to be chosen. In the last half of June and the first half of July the prevailing type is the serious diarrhea, marked by large watery passages, ranging from a few up to twenty or thirty a day. During the following six weeks these serious cases are comparatively rare and true enterocolitis is more common. This means that the acute cases of the earlier summer have settled down to a true organic or inflammatory disease. During August the passages are of the thicker and more grumous type. New cases are much less frequent than in the earlier summer. In the late summer and early fall colitis appears, and the passages are of the so-called dysenteric type. They consist largely of mucus and blood and are accompanied by tenesmus and high fever. With cases of the serous type, with twenty or thirty large movements a day, it is often a question whether it is wise to administer a laxative. When mucus and blood appear in the stools, castor oil should be given and persisted in, even at the expense of some nausea and vomiting. Astringents, so much used in the past, are irrational and ineffective. Bismuth, either alone or with some simple adjuvant, is today the most commonly used drug in summer diarrhea. Opium is contraindicated in the first stages of acute diarrhea, before the intestinal canal has been freed from decomposing matter; when the passages are infrequent or of bad odor; when there is a high temperature or cerebral symptoms are present, and when its use is followed by increase of temperature or the passages are very frequent, large, and watery; in dysenteric diarrhea, in which case it should be preceded by castor oil or a saline; in late stages with small frequent, nagging passages, and when the passages consist largely of undigested food, and the bowels act soon after the food is taken into the stomach.

Treatment of Pylorospasm in Infancy.—In contrast with hypertrophic pyloirc stenosis, which is a congenital condition with distinct organic lesions, pylorospasm is acquired at any age. In the treatment of the latter, J. Ruhrah (Amer. Jour. Med. Sci., 1914, cxlvii, 474) considers feeding with breast milk as of the first importance. If the case does not do well the milk may be partially skimmed. If the supply is inadequate partially peptonized or dilute modified cow's milk may be employed. If these fail, well diluted malted milk or diluted condensed milk may be tried. In severe cases gavage may succeed when vomiting follows nursing or bottle feeding. Small quantities gradually increased and given at short intervals are usually best retained. Lavage once or twice a day is advised. Plain water or salt solution by rectum will relieve thirst and stimulate excretion of urine. Of drugs, atropin is far superior to all others, given in doses of 1-2000 grain every four to six hours, sometimes more frequently. If no therapeutic effect is obtained the dose may be cautiously increased until symptoms of poisoning appear. If the diagnosis of congenital hypertropic pyloric stenosis is uncertain, from three to six weeks of such medical treatment for pylorospasm should be tried before deciding upon operation.

Gastric Digestion in Infants.—The paper of Mr. Hahn (Amer. Jour. Dis. Child., 1914, vii, 305) is based upon the analysis of ninety-four specimens of stomach contents from thirty-seven infants. He says that the determination of the hydrogen-ion concentration is the only rational method of measuring gastric acidity in infants. The hydrogen-ion concentration, $(H) = 1 \times 10^{-5}$, is the normal reaction of the stomach contents at the height of indigestion for infants fed on one-third cream-milk and two-thirds milk. $(H) = 1.0 \times 10^{-5}$ is the optimum reaction for rennet and gastric lipase; pepsin is inert at this reaction. The important processes in the gastric digestion of infants are the coagulation of milk by rennet and the splitting of fat by gastric lipase; the peptic digestion of casein is unimportant for the infant. In infants from one to four months old fed on one-third cream-milk the lipase content increases with the age of the infant. In infants from four to twelve months old fed on two-thirds milk the content of all gastric-ferments is greater than in infants from one to four months old on one-third cream-milk.

Diseases of the Respiratory System

Under Charge of

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Diagnosis and Treatment of Tuberculosis in Childhood.—W. C. Bailey in Boston Medical Journal employs the following procedure: He inquires very carefully as to the presence of an infecting case in the family, and if one is found, makes a provisional diagnosis of infection. Then he tries the von Pirquet test and if that is positive he makes a physical examination for signs of intrathoracic or intraabdominal tuberculosis for the purpose of finding out whether the case is one of infection only or of disease. If the well-known signs of mediastinal gland infection are elicited and if there is no active disease in the lung or abdomen, the facts should be carefully explained to the family, the case should be reported to the proper authorities, and the child should be given special hygienic care at an outdoor school. If active disease is found, the child should be treated in a sanatorium or in a special outdoor school. In the event of a negative von Pirquet test, with a history of contact, the child should be kept on the suspicious list, placed in an outdoor school if possible, and the von Pirquet test should be repeated at appropriate intervals. If there is a negative history of contact and a negative examination but if there is a positive von Pirquet test, the procedure should be the same as in the case cited above, a careful physical examination being made always for the purpose of detecting the active cause. A change in board of health regulations should be made so that a physician may report cases of tuberculous infection as distinguished from cases of tuberculous disease requiring sanatorium care, whether these be open cases or not. In the cases in which contact is proved, but the von Pirquet test is negative, the physical examination should be made in the same way and the von Pirquet test should be repeated several times. In any event the name of the child should be given to the health and school authorities as that of a suspicious case requiring supervision.

Tuberculosis in Children.— R. M. Smith in Boston Medical Journal emphasizes the distinction between tuberculosis infection and tuberculous disease. Tuberculous infection occurs in many instances without symptoms sufficient to attract any atention and then goes on unrecognized. It may give no signs on physical examination, but usually thoracic and abdominal gland tuberculosis is made evident by the local signs of enlarged glands. There may be chronic enlargement of the bronchial or mesenteric glands from infection with some other organism than the tubercle bacillus. It is necessary to have a positive von Pirquet reaction to make the diagnosis of tuberculosis. The von Pirquet reaction may be taken as a safe index to tuberculous infection. The instances in which a negative reaction occurs in the presence of a tuberculous infection are usually instances which can be explained according to well-known facts. Unless the tuberculous infection is active, it is not a source of immediate danger, either to the individual or to the community. A child with such an infection should be treated, not as a patient with active tuberculosis, but as an individual to be watched carefully, fed properly and put under good hygienic surroundings in order that the disease may not become active. Tuberculous disease means an active tuberculosis. This condition in children starts as a glandular disease, but has a great tendency to extend beyond the confines of its original seat within the gland, and when such an extension occurs there is apparently little further tendency to localization. It becomes at once a generalized process, leading often to rapid death. After the age of ten years, tuberculosis assumes the characteristics of adult tuberculosis, but before that age the diagnosis must be made on different evidence. The symptoms are usually very indefinite. There is little or no cough and almost never any sputum. The temperature is frequently not greatly elevated, and not more elevated than occurs in infants and young children from a variety of causes. Physical examination in the early stage of the diseases reveals nothing other than a child in poor condition with enlarged glands. When the disease extends beyond the glands into other parts of the body the physical signs become more definite. In the lungs they may be those of bronchopneumonia and frequently this diagnosis is made when there is no suspicion of tuberculosis.

Tuberculosis in Infancy and Childhood.—This was the subject of a joint discussion of this Section and that of Diseases of Children, British Medical Association (Medical Record).

Dr. D. B. Lees said children were specially susceptible to tuberculosis, the infection of which was often marked by symptoms recalling those of rheumatic fever. During the past few years the x-ray had given good service in the diagnosis and in exposing the lesions of this disease. The question was asked whether tuberculosis in children could be diagnosed by physical examination alone, without the x-rays or bacteriology. The speaker thought the ordinary measures of inspection, palpation, percussion, and auscultation were sufficient if carefully and methodically used. All muscles must be relaxed and the patient must be recumbent, or, for examination of the back, sitting and stooping slightly. Percussion often showed evidence when auscultation was negative, and vice versa. He said the distribution in the lungs was always the same and symmetrical in as far as the lobe division permitted, and quite different from the areas of atelectasis, infarct, etc. He showed a diagram with the lesion areas marked. There were dull areas at the apices of the upper and lower lobes; these were the chief ones. Dullness, due to enlarged glands, in asthma, etc., lay between these areas. Another, working independent of these percussion results, could confirm these conclusions by the x-rays. Examination should be made monthly with a permanent record taken in finger-breadth measurement. Dull areas should be marked in a simple diagram. All this refers to adults and adolescents as well. In children there were special features distinguishing the clinical picture from that in adults. Tuberculosis in children was much more liable to spread by the peribronchial lymphatics and was much commoner on the right side, probably because of the relations of the glands. The glands when infected swelled and pressed on the vagus causing asthcatic or croupy symptoms. A gland might burst into a hronchus causing pneumonia, miliary tuberculosis, or emphyema. Peribronchial tuberculosis, fibrosis, etc., had characteristic skiagrams. No sound conclusion could be made on a screen examination without a photograph. Even with a photograph the greatest technical skill was required and the highest knowledge was called for in interpreting it. The rays might project an area of dullness on to a different area. Careful percussion would detect these fine incipient changes as well as very large areas and give their true situation while there were yet no morbid sounds. Children were very liable to mixed infections. An apparently simple bronchopneumonia was often found followed by tuberculosis. When an apparently simple bronchopneumonia was found one should examination these apices. Fatal tuberculosis in children began oftenest in their lungs—not the intestines. Common lung troubles that seemed to become tuberculous were probably lesions in an already infected child or tuberculous infection was mixed with the prominent one. Careful physical examination was within the power of every general practioner without a laboratory, and he could regulate his treatment by the knowledge so acquired. When every man realized this we might hope for the extinction of pulmonary tuberculosis.

Infectious Diseases.

Under the Chare of

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Vulvovaginitis in Children.—This affection which has hitherto not received the attenion which its importance warrants, is coming to be recognized as a formidable malady. Epidemics occur not infrequently in children's hospitals, asylums, and other institutions, and it is undoubtedly prevalent among little schoolgirls almost everywhere. On account of its obstanacy it is very troublesome to manage, and Health Commissioner Goldwater of this city has made the statement that the questions involved in handling it are among the most difficult and puzzling with which public administrators have to deal, and that, so far as he is aware, the problem has not as yet been solved. While in a few instances the vaginal and labial discharges are due to some catarrhal state depending on the presence of thread worms or on the debilitated condition of scrofulous or tuberculous children, in the vast majority the condition is a gonococcic infection; so that for all practical purposes the vulvovaginitis may be considered a gonorrhea.

The special points of interest are the sources of infection, the treatment, and, above all, the matter of prevention. The most recent communication on this subject is a comprehensive paper by F. J. Taussig, of St. Louis, in the American Journal of the Medical Sciences for October, 1914, which is based on sixty-six cases observed during the past eighteen months. He is convinced that the most frequent means of infection is from child to child, and that the most common manner of transmission is through the school lavatory. In epidemics in children's institutions the hand of the nurse and the bath may at times be responsible, but Taussig does not believe these are very important factors in sporadic cases; nor does he think that transmission is common through cloths, either in the form of clothing, towel, wash cloth or bed linen, since cloth will absorb considerable secretion, and, as the gonococcus is particularly susceptible to drying, will in the course of ten or fifteen minutes ordinarily be dry enough not to be a serious source of infection.

In the treatment, Nathaniel Barnett (Archives of Pediatrics, September, 1913) advises the use of the Kelly endoscope. After the secretion has been removed with the applicator, Lugol's solution is applied to the cervix and vaginal walls as the endoscope is slowly withdrawn. These treatments are carried out three times a week, and in addition, the mother is instructed in the method of giving daily vaginal douches of potassium permanganate solution, one to 10,000, by means of a soft rubber catheter, introduced as far as possible. Taussig employs two per cent and even four per cent silver nitrate solutions, the injections being made with the ordinary small rubber tipped urethral syringe. He has found no record of the use of such strong solutions by others, and believes that his favorable results and the absence of any untoward symptoms justify a further test of this treatment. Rest in bed is recommended in acute cases, and, like Barnett, Taussig employs hexamethylenamine internally. Fresh air, good food, and an iron tonic aid materially in effecting a cure.

In the matter of prophylaxis this author considers most important the adoption in the water closet of a U shaped seat, with low bowl, and other precautionary means to prevent the spread of infection through lavoratories in schools, playgrounds, comfort stations, and tenements. He suggests various other preventive measures, which cannot be considered here, and in concluding remarks that it can certainly be said of gonorrheal vaginitis in children that one ounce of prevention is worth many pounds of cure.—Ed. New York Medical Journal, 10-10-'14.

Bacteriology of the Posterior Nasopharynx in Scarlatina and Treatment of the Disease by Vaccines.—N. S. Ferry (Medical Record., May 23, 1914, 934) presents a bacteriological study of the so-called Micrococcus "S" described by E. C. Schultze as present in smears from 459 out of 555 cultures taken from the throats of scarlatina patients.

E. C. Schultze and L. A. Goldberger (Ibid., 931) record the results obtained in 128 cases of scarlatina treated with vaccine prepared from this organism, from streptococcus or these combined. In addition to the vaccine injection all received a preliminary course of eight or ten doses of calomel, 1-10 to 1-4 gram and castor oil or citrate of magnesia, and also had their throats swabbed with a 10 per cent solution of carbolic acid in oil, and their bodies rubbed with a 10 p. c. solution of eucalyptus in oil, as advocated by Robert Milne. They noted rapid improvement in most of the cases treated, the temperature falling by crisis and not by lysis. Notwithstanding the fact that many patients were out of bed and on a full diet early in the course of their disease, there were comparatively few complications. Very few secondary contact cases developed, possibly due to the swabbing of the throats of the healthy members of the family as well as the diseased. The spread of scarlet fever could probably be kept under better control and the number of cases greatly reduced if all school children were examined by the proper health authorities at the beginning of each school term and in relays during the school year. Cultures should be taken from their throats and examined for Micrococcus "S" as well as Klebs-Loeffler bacilli; all suspicious cases to be excluded and isolated until further cultures show no more Micrococci "S" or Klebs-Loeffler bacilli present.

Working with these vaccines, G. I. Kieffer and N. S. Ferry (Ibid., 936) report their results in 106 cases of scarlatina as well as its prophylactic use in the Herman Kieffer Hospital. It appears that the vaccines which contained the streptococci had an advantage over the ones containing the Mic. "S" alone, as well as over the usual expectant treatment which was previously carried on in the institution. As a prophylactic, the Mic. "S" vaccine was apparently of more possible value. Since its introduction as a prophylactic measure among all nurses who had not already had the disease, not a case has been reported; also, during a period of three months when the prophylactic treatments were discontinued, four out of about twenty nurses became infected.

Latent Tuberculosis in Childhood.—H. Kleinschmidt cites the suggestions of others that tuberculous infection usually occurs either in utero, at the time of birth, or shortly thereafter and then remains latent in the body for longer or shorter periods of time. Experiments on animals have shown that microscopical changes may occur in the lymph glands within twenty-four to forty-eight hours after inoculation can be obtained in eight to twelve days. It is also known that the cutaneous tuberculin reaction cannot usually be obtained in infants under less than three or four months of age. All of these observations seem to oppose the idea of a latent tuberculosis, but Kleinschmidt has been able to show that such is not the case, for very small amounts of tubercle bacilli injected into animals cause only a marked delay after the appearance of the tuberculin reaction, and observations on infants have given positive reactions as early as the seventeenth day after birth. The failure of the skin test in infants is referable to a peculiarity of the skin of the young which renders it resistant to reaction not only to tuberculin but also to irritants. The author believes that there is considerable evidence that tuberculosis may remain latent for long periods of time in infants and children even in the absence of any positive tuberculin skin reaction.—Medical Record.

Orthopedic Surgery

Under the Charge of

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Flat-foot in Children.—A Ehrenfried (Boston Medical and Surgical Journal, 1914, clxx, 538) says that the diagnosis of weak, pronated or flat foot should not be made inconsiderately. A study of the records of 1000 children under twelve years of age applying consecutively for treatment at the out-patient department of the Children's Hospital in 1912, showed 440 having some static disability of the feet. In 327 of the 440 cases the foot symptoms were secondary to some other condition, which required treatment. Continued observation in many apparently simple cases showed mild rickets or unsuspected infantile paralysis as a cause, and less frequently such conditions as tuberculosis of the knee, hemiplegia, or lead, postdiptheritic or spastic paralysis of the primary cases were congenital. These, the result of mechanical influences prior to birth, are more properly classified with club foot. The other primary cases, ninety-five in number, show evidence of muscular insufficiency resulting from physical debility as the leading factor in causation. This debility is frequently the sequel of an infectious disease, and is particularly apparent when the child has been the victim of a series of infections in close succession. Other static disabilities, such as relaxed knees, functional scoliosis, and gastroptosis are likely to be present. The secondary cases, which were in the majority, were the result of rickets or of rhachitic deformities in approximately 200 cases, of infantile paralysis in 107, and of other conditions in approximately twenty cases. In many of these the foot disability was a minor incident. Prophylaxis of foot disabilities consists in combating the two important causes thereof, rickets and the infectious diseases of childhood.

Operation for Hip Contractures in Poliomyelitis.—Contractures of the soft tissues at the hip due to the shortening or lack of growth of the soft tissues following paralysis or injuries are sometimes easily overcome by manipulation and stretching. When they are of long standing they may not yield to tenotomies of the tendons and of the tensor fascia femoris, and myotomies are necessary. For difficultit cases and some of the milder ones the following operation has been devised by R. Soutter (Boston Med. and Surg. Jour., 1914, clxx, 380): First, a longitudinal incision is made 3 inches long, parallel with the long axis of the body, with its middle 2 inches posterior to the anterior superior spine. It is carried down to the fascia. By retracting the subcutaneous tissue the fascia is exposed from the anterior superior spine back to the trochanter. Second, the fascia is incised at right angles to the skin incision, cutting all its fibers transversely from the anterior superior spine back to the great trochanter. Third, the skin incision is next retracted as to expose the anterior superior spine. By means of an osteotome, the attached muscles and fascia are removed from the anterior superior spine subperiosteally on the inside, on the outside and below; they are all pushed downward. The hip is hyperextended backward, pulling the tissues down with it. If the tension is great the soft tissues are pushed down by means of gauze or blunt dissector, clearing off the periosteum and soft tissues from that part of the pelvis below the anterior superior spine. Following the part of the pelvis below the anterior superior spine. Following the operation a plaster-of-Paris bandage is applied to the whole leg. The hip is hyperextended in order to correct the lumbar lordosis usually present in these cases. It is also adducted slightly to stretch the lateral contractures. The plaster of Paris extends from the nipple line in front and from the lower waist behind to the toes of the foot operated upon. The patient is put on a Bradford frame elevated to allow the legs to drop to a lower level than the hips and shoulders. By this method of procedure the muscles are not cut across; their periosteal attachment is simply moved 1½ or 2 inches downward.

Chondroystrophia Fetalis.—by James K. Young. Archives of Pediatrics, May, 1914.

The author presents two cases of this disease, one being of the hyperplastic form, and the other, growth of the epithyses, the latter, an irregular growth together with sponginess of the bones. The cause of this disease is unknown, and it is usually fatal soon after birth.

BOOK REVIEWS

Food Values, Practical Tables For Use In Private Practice And Public Institutions, by Edwin A. Locke, A.M., M.D. Instructor in Medicine, Harvard Medical School, Boston, Mass. Cloth, $1.50 net. D. Appleton & Co., New York City.

Dr. Locke has collected from many sources as exact information as possible regarding the composition and nutritive value of the more common foodstuffs and has arranged it in a form so simple, that it may be readily applied to the every-day regulation of dietetics. These tables show the chemical analyses of foods and food values which will be of great help to physicians in regulating the diet for the sick.

Tables somewhat similar to these have been already in existence, but they are not always readily accessible to the doctor and are generally badly arranged, the majority requiring the actual weighing of the foods with tedious calculations to determine nutritive values, while the figures are almost always for raw foods which differ from the nutritive value of cooked foods.

Dr. Locke's tables contain portions for ordinary helping which are carefully estimated as to the percentage of proteins, carbohydrates and calories, actual weighing not being necessary. To practitioners, dieticians, nurses, and the housewife, this little volume should prove to be a most helpful guide on the subject of diet.

The Source, Chemistry, and Use of Food Products, by E. H. S. Bailey, Ph.D., Professor of Chemistry and Director, Chemical Laboratories, University of Kansas. Price, $1.60 net. Philadelphia. P. Blakiston's Son & Co., 1914.

In this practical little volume, the Source, Chemistry, and Use of Food Products, Dr Bailey outlines the general principles of food products, their manufacture, and preparation, treating the subject in such a practical manner that the reader will have a working knowledge- of what constitutes a good food and where it is to be obtained. The more important foods beverages are discussed as to their source, method of preparation for the market, methods of packing, preserving and shipping, their composition and nutrient and dietetic value and their use by people of different countries.

Using this work as a guide, it will be found sufficiently complete to serve as a textbook for students of foods in our colleges and high schools, and to properly supplant and give more completeness to the ordinary courses in the preparation of food selection and economic use of food and dietetics. In handling such an extensive field the matter is necessarily condensed to the essentials, yet the author has managed to include much of historical and general interest.

On page 157, the author states that the consumption of rice leaves the blood acid, and the potato alkaline. We cannot quite agree with this statement, and it may be possible that the author does not mean just what he says. Again, the quantity of the milk for the Babcock test is erroneously given, as 15.6 c.c.

This little volume is well bound and printed, and we would suggest that in the second edition more attention be given to proof reading, which seems to have been sadly neglected.

As a whole, it is a very practical little volume and worthy of a place on the bookshelf of every one who has anything to do with diet.

Protein and Nutrition. An investigation by Dr. M. Hindhede, Director of the Hindhede Laboratory for Nutrition Research, Established by the Danish Government. 200 Pages, cloth binding, 7 shillings sixpence, net price. Ewart, Seymour & Co., Ltd., 12 Burleigh St., Strand, London.

This work may be tersely termed one of the most important contributions of the decade to the science dietetics.

Never before has the important question of Nutrition been so thoroughly and searchingly investigated as by the exhaustive study and experiences of Dr. Hindhede. He brings forward indisputable evidence in support of his claim that the value of Protein as a food has been much over-rated, and that man as well as animals can live on half the amount prescribed as necessary and accepted by scientific authority.

Dr. Hindhede believes in, and teaches the rationale of a low protein diet, pointing out the errors and fallacies of a high protein together with the ills attending the latter. From their own figures and experiments he claims to disprove the deductions of Voit, Attwater, Hutchinson, McKay and other dietetic authorities. The work is intensely interesting and instructive, and should be read by every physician who is interested in the subject of dietetics.

The book has already appeared in Denmark and Germany, where it has won marked recognition from medical men and excited much attention and interest among the intelligent general public.

Nutrition and Dietetics. A Manual for students of medicine, for trained nurses, and for dieticians in hospitals and other institutions, by Winfield S. Hall, Ph.D., M.D., Professor of Physiology and Dietetics in Mercy Hospital and Wesley Hospital, Chicago. Second edition, 300 pages, cloth binding, $2.00 net. D. Appleton & Company, New York and London.

Nutrition and Dietetics is a subject of absorbing interest to the physician and dietitian alike. This volume has been prepared to meet a demand for a concise text-book suitable for medical students, physicians, dietitians and nurses.

In Part I, Dr. Hall considers under Foods, the needs of the body, natural foods, foods classified and defined, and the preparation of foods. Part II—The Digestion of food, absorption of food, the assimilation of food, waste material. Part III—Fuel value of foods, the menu, food for healthy people, food for normal infants. Part IV—Infant feeding, principles of sick room dietetics, feeding in fevers and infectious diseases, dietetics in diseases of the digestive system, in disorders of nutrition, etc.

As will be seen, from this synopsis of the contents a knowledge of the body chemistry of physiological chemistry is so essential that the author has seen wise to devote considerable space to a concise presentation of the fundamental principles of the most essential facts of physiological chemistry.

The student of nutrition and dietetics should possess a general knowledge of the structure of the human body, more particularly of that of the alimentary canal and the digestive system. Without a clear understanding of this subject, many statements of any work on nutrition and dietetics would convey only the vaguest idea to the reader. All of these points and many others are brought out and made plain in this work which we have pleasure in commending to the profession.

PEDIATRICS

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EDITORIAL

INTESTINAL DISTURBANCES IN INFANTS.

Dyspepsia is produced by the ingestion of more food than the digestive processes can take care of, either too large feedings being given, or the interval between is far too short. Owing to this disproportion between the amount of food ingested, and the digestive powers, chemical changes take place in the contents of the alimentary canal which becomes pathological and irritates the mucous membrane, producing vomiting and diarrhea.

Besides the obvious prophylaxis of care in apportioning the food, starvation is advised for treatment of this dyspepsia, for twenty-four hours, on a weak infusion of Russian tea sweetened with saccharin instead of sugar. If the symptoms do not yield to this treatment, calomel may be givin in doses of 1-3 to 3-4 gr. at intervals of two hours for three times. Milk diet should not be resumed at once when the stomach and intestines are emptied but some starchy diet substituted. Soxlet's nutrient sugar, a soluble preparation of malt and dextrin is recommended to be used in 5 per cent. solution for very young infants. For older babies pure oatmeal or cornflour may be used. Within three days the stools should be semisolid and of a dark brown color, when the milk may be cautiously resumed. If the vomiting and anorexia continue. the motor functions of the stomach should be investigated. The child should be given a meal adjusted to its weight and age, and the evacuation examined for undigested food and free hydrochloric acid. If the stomach is not empty and contains no free hydrochloric acid it should be washed out with a 1 per cent. solution of Carlsbad salts. In obstinate cases pepsin and HCl may be of use, or a mixture of 1 gram of liq. strychnini.

2 grams of fluid extract of condurango, and ten grams of tincture of rhubarb may be given, in doses of five drops each fifteen minutes before a feeding, three times a day.

Infantile enteric catarrh generally occurs as a sequel of the dyspepsia, with thin, watery stools, very acid, and speedily producing intertrigo. The bad results upon the general health are not slow in appearance, and wasting sets in. The respiration is deep, difficult and frequently sighing, the pulse irregular and small. Vigorous children often exhibit a high fever which may be lacking in those of weaker constitution. The great danger to life in this condition is in collapse, and the best means to combat such a tendency is the hypodermic injection of camphor in an initial dose of 0.1 to 0.2 gram, half the dose repeated at two hour intervals. A very little tea may be given by mouth, and the body supplied with water by subcutaneous injections of saline solution, 150 c. cm. twice a day. Cold wet packs may be employed to reduce the fever, and fats should be eliminated from the diet even after the tendency to collapse is overcome. The best food is mother's milk with the fat taken out. If this cannot be had, thin barley water or other similar starchy preparation may be used. The author reports some cases in which good results have been obtained by giving good full milk warmed to 40 degrees, C. and treated with pepsin, the amount of the latter, however, being double that usually indicated.

SPIROCHAETA PALLIDA ONCE MORE.

Although conservative medical thought does admit that in the Spirochaeta pallida (Treponema pallida) the specific organism of syphilis has actually been discovered and isolated an active interest is nevertheless recognized as attaching to all studies of this organism, and a case recently reported at a meeting of the Societe Medicale des Hospitaux of Paris by Menetrier and Rubens-Duval seems especially significant, inasmuch as it shows an instance where the finding of the spirachaeta pallida in the blood provided an explanation for a death which otherwise would have seemed puzzling enough.

The case in question was that of a boy, born at term and showing no signs of congenital syphilis except a number of bullae on the sole of each foot, and in all other respects apparently quite normal. Microscopic examination of the placenta also revealed nothing abnormal. Nevertheless the child died when but twelve hours old. An autopsy was obtained, and congestion of the organs was observed. This was particularly marked in the liver, which was very much enlarged and violaceous red in color.

The bullae from the soles of the feet were subjected to a microscopical examination and found to be due to a cleavage of the horny layer of the epidermis and to contain a large number of desquamated cells, among which were many Spirochaetae pallidae. These were also found less abundantly in the Malpihian layer of the skin and in the papillary layer and in the blood vessels of the epidermis. In the last mentioned situation some were discovered in the lumen of the vessels among the red corpuscles, others were in contact with the vascular endothelium, and still others were traversing the walls and passing out of the vessels. These findings afforded an explanation of the formation of the bullae, the spirilla evidently being brought to the skin by the blood stream, traversing the vessels and then the epidermis. In this situation, finding conditions favorable for their development, they proliferated rapidly. Examination of the viscera revealed the spirochaetae in greatest abundance in the suprarenal capsules, where they were most numerous in the vessels, the walls of which they were also traversing. Considerable congestion of the capsules was also noted, and similar conditions found in the liver and in the spleen.

It is evident, then, that while the only lesions produced were the bullae upon the soles of the feet, the infection has been generalized by the blood and an actual septicemia resulted. The placenta had been placed in hardening fluid immediately after delivery, and was also subjected to a microscopical examination. Only in the vessels were any spirochaetae detected, and even here not in such large numbers as in the tissues of the child. This difference, it has been suggested, might have been accounted for by the lapse of twelve hours between the birth and the death of the infant. It is also interesting to note that the chorionic villi in the placenta were the site of the organism, which were thus found only in the fetal blood.

Altogether the case was one of great importance, demonstrating as the cause of death a heretofore unrecognized form of syphilis, namely a subacute infection of the blood similar to that of anthrax. Furthermore, everything that encourages and directs the general interest of the profession toward the study of this organism may bring one step nearer the solving of the great problem of venereal disease.

FOR THE PHYSICIANS OF AFFLICTED BELGIUM

While the condition of the Belgian people is rapidly becoming critical with famine and cold confronting them, it should not be forgotten that the physicians of this stricken land—and their families—are likewise in direst need; the holocaust that has swept over their country has also left them destitute—their homes, equipment libraries, everything in fact, has been destroyed and lost. Hunger, cold and the most abject misery are all that they can expect unless those of us in happier circumstances take steps to relieve their condition—not next week, not tomorrow, but Now, TODAY!

Reluctant as we have been to make any move in this direction, for fear our purpose would be misinterpreted and misunderstood, it seems absolutely necessary that something should be done, if for no other reason than to draw attention to a class of men who are apt to be overlooked because of their activity for others. Therefore, hopeful that no one will place a wrong interpretation on the movement, or be so unkind as to think it possible for this or any other journal to seek any publicity from a condition so poignant with human misery, we have yielded to the requests of many interested friends and will straightway undertake the collection of an American Fund for Belgian Physicians.

Keenly appreciative of our humble capacities, we turn to our colleagues, our editorial brethren, and our friends generally, to cooperate with us in this effort to raise a sum sufficient to relieve as much as possible the awful distress and suffering our Belgian brothers are undergoing.

From everyone, therefore, who is willing to aid this movement we solicit some small sum—one dollar, fifty cents, twenty-five cents—any amount will help to swell the total. Our one great plea is for every one who intends to give something, be it ever so humble, to send it in early—today! Remember, "he gives twice who gives quickly," and the need of those who are to be aided by these contributions is urgent beyond expression. All contributions should be addressed to the Fund for Belgian Physicians, care AMERICAN MEDICINE, 18 E. 41st St., New York City. Make checks payable Belgian Medical Committee. In sending in contributions please give name and address of donor. These will not be published if not desired, but it will aid the committee to keep accurate records. This committee will work with the Belgian Relief Committee and arrange with that body to make disposition of the funds collected.

In the November issue of AMERICAN MEDICINE there will appear a full list of contributions with other essential information. Brother physicians, brother editors, good friends, and every one whose heart beats in sympathy for Belgium's sorrow-laden but noble, uncomplaining and hard working doctors, help us to save them from hunger, cold and destitution!

PEDIATRICS

ORIGINAL ARTICLES

GLANDULAR TUBERCULOSIS

BY ALFRED C. WALLIN, M.D.,
New York.

Glandular tuberculosis is the subject as given to me; but I am taking the liberty of cutting it down to tubercular adenitis, or scrofula—the term used in days gone by.

By tubercular adenitis we mean tuberculosis of the cervical lymph nodes. The disease—as we all know—is caused by the tubercle bacilli of Koch.

There are several different types but the types concerning us as causing tubercular glands are the Bovine and Human.

W. H. Park of New York says that of 45 cases 25 showed human type and 20 bovine. Kerley says English and German writers agree that a larger percentage are caused by human type. Royal Commission of England investigated 64 cases of supposed human tuberculosis and found bovine bacilli in 14 cases; the 14 being glandular cases.

William Litters examined 9 cases of primary tubercular adenitis and found 5 of them due to human type and 4 bovine; also proved that the bovine type was more prevalent in childhood than in adult. In childhood we find the tubercle bacilli have a great pre-destination for the lymph nodes.

A proof is that the bovine type is quite a common cause of this form of tuberculosis.

An infant up to the age of two years seldom develops glandular tuberculosis for the reason that a large per cent. are caused by bovine infection coming from cow's milk.

Park and Krumweide say that in children the bovine causes a marked percentage of cases of cervical adenitis. It also causes a large percentage of alimentary tuberculosis in cases limited to children.

Avenues of Entrance. Respiratory and Alimentary tracts, Genito-Urinary and Skin in general.

Portals of Entry. Eisendrath classed them (1) the faucial tonsils, (2) pharyngeal tonsils or adenoids, (3) tuberculosis of temporal bone, (4) carious teeth, (5) tubercular lesions of the nasal and buccal mucous membranes.

Many recent articles emphasize the importance of nasal pharyngeal adenoids and tonsils as the primary foci of cervical adenitis. Jacobi, years ago, pointed out that adenoids was more often the entry of infection than the tonsils.

Predisposing causes of tubercular glands are air containing tubercular bacilli, and food infected with tubercular bacilli. Predisposing conditions, (1) adenoids, (2) hypertrophied tonsils, (3) post-nasal catarrh, (4) carious teeth, (5) stomatitis and diseases of the gum, (6) influenza, (7) measles, (8) whooping-cough, (9) broncho-pneumonia, and possibly a tubercular diathesis, (10) eczema of the scalp, (11) otitis media.

Adenoids are thought to be the cause more often than tonsils on account of the narrowing of the respiratory passages. Lartigan found 15 per cent. of all adenoids tubercular.

Steiner and Nuereuther report tuberculosis of the lymph glands in 299 cases out of 302 autopsies, also bronchial tubercular glands in 286 out of these cases.

The percentage according to the report of Muller in 500 autopsies on children who had tubercular lymph adenitis was as follows: (1) bronchial glands 81 per cent., (2) mesenteric glands 57 per cent., (3) mediastinal glands 11 per cent., (4) cervical glands 9 per cent., retroperitoneal 7 per cent.

Rillet and Barthez found tubercular lymphatic glands in 312 cases out of a total of 488 autopsies. Babes found that more than 1-2 of the autopsies performed during 8 years, revealed the presence of tuberculosis of the lymph glands.

Muller found glandular tuberculosis in 126 cases out of 800 autopsies. At the Budapest Children's Hospital, 50 per cent. of all lymphatic glands were found tubercular.

Bonney noticed during the past few years a large number of cases of enlarged glands near the angle of the jaw in children following influenza and tonsilitis. He also says tubercular adenitis may be either uni-lateral or bi-lateral; in the last event the process is usually more pronounced on one side.

Characteristic feature of this condition is the chronicity of its course. The submaxillary group of glands is more frequently involved. It is very common to detect a chain of small nodules extending along the anterior or posterior border of the sterno-cleido-mastoid muscle.

Robertson found 8 per cent. of all adenoids tubercular. Stone believes that tonsils without much enlargement or local manifestations are frequently the infecting foci.

Age in Tuberculosis of the Lymph Nodes. Holt says that the age at which we find tuberculosis of the cervical lymph glands is from 3 to 10 years and that the bronchial glands are nearly always infected. Kerley says that most of the tubercular cervical lymph glands are found between the ages of two and eight years.

Charles N. Dowd at St. Mary's, Roosevelt, and General Memorial Hospitals, operated on 465 cases of tubercular lymphatics of the neck and found only 15 cases below the age of two years. Between the ages of two and 17 years he found 80 per cent. This statement corroborated by Fischer who tabulated 1484 cases, reported by 19 observers and found 3 9-10 per cent. under five years of age.

Cornet's analysis of the autopsy records of the Berlin Pathological Institute for 15 years showed a single case of tubercular cervical adenitis out of 486 cases from birth to the end of the first month. 2nd to 3rd month 6 per cent; 3rd to 5th month 10 per cent.; 6th to 9th month 17 per cent.; 9th to 12th month 27 per cent.; 1st to 2nd year 26 per cent.; 2nd to 3rd year 29 per cent; 3rd to 4th year 31 per cent; 4th to 5th year 22 per cent.

Wohlegremuth found that out of 4900 cases 297 were under 10 years of age; that 60 per cent. of these were infected with glandular tuberculosis.

Muller, Babes, Huebner, Newman, Still, Hand, Simons. Scheiber, Jacobi and Holt report that statistics of children showed 22 to 40 per cent. of glandular tuberculosis under the age of five years. Foreign statistics show a little higher percentage than in this country. Nearly all observers agree that lymphatic glands are the primary foci of infection; the lungs being secondary.

Heredity is not today thought to be of much importance as a predisposing factor; while acute infectious diseases which involve the mucous membranes, such as measles, whooping-cough, influenza, enteritis are very important predisposing factors.

Pathology. Dowd says most frequently the first to be infected are the upper set of the deep cervical glands.

Kelley says the subparotids. The diseases glands are isolated firm, smooth, globular and ovoid in shape; devoid of pain; movable under the skin. If they become acutely inflamed they may become painful and tender. Suppuration and fluctuation, redness of the skin and abscess development. It may spread from one gland to the other and keep the condition up for several years, until the infection is located somewhere else and the condition produced which generally ends fatally.

Symptoms. Rachford contends that simple anemia in young children with the history of exposure to tuberculosis is suggestive of lymph tubercular nodes. This type of anemia is secondary and of the chlorotic type. He found from his dispensary records that 45 per cent of neurotic children were actively tubercular. Abnormal dwarfishness, failure of health, loss of weight or failure to gain weight, loss of appetite, night sweats, bad chronic hypertrophied tonsils and adenoids, catarrhal conditions of the nasal and post-nasal cavities, failure of menstrual functions in older girls. Among the first is a gradual swelling of the glands which persist in slowly increasing, painless not even tenderness which may continue for weeks and months until some inter-current irritation when we may have the swelling increased with tenderness and pain low fever; the external surface hot and red which gradually goes on to suppuration. These swellings may appear in the occipital group, mastoid group, the parotid group, submaxillary group, submental group, or the deep cervical.

The deep cervical are the ones generally affected and generally the swelling appears in front of the sterno-cleido-mastoid muscle about the middle. At first can be palpated about the size of a cherry or olive; it is movable, elastic, firm tumor. If the gland is destined to suppurate inflammation and adhesions develop and involve the skin and break down and discharges through the skin, kept up for weeks or months and may develop a fistula.

Diagnosis of Tubercular Cervical Lymph Glands. The glands involved are readily palpable and the question arises as to whether their enlargement is due to inflammation produced by the tubercular bacilli or some other micro-organism. The age of the patient, the length of duration, together with the general history, the location of the swelling, slow course without any apparent cause, slowly caseating, softening and finally suppuration, followed by a sinus formation and scar tissue, often in conjunction with blepharitis, phlyctenular keratitis, coryza, chronic nasal catarrh, eczema of the lip and face.

We next think of doing a Von Pirquet test which we consider the most reliable, safest, and simplest test of performing. L. Hammond and S. Wohlman used the Von Pirquet and conjunctival tests on 1500 patients and have arrived at the conclusion that the value of the reaction is now well established in the sense that only patients who at sometime were infected by the tubercular bacilli, can react. The test shows a large number of healthy people have been infected, but if the test remains positive, even when the infection has been overcome, it is important to the clinician only when the patient is still in his infancy. Reaction during the first year or two; shows that the patient was only recently affected and must be strengthened for the combat with the invader.

If the test is negative and the child moribund or suffering from measles, any suspician of tuberculosis is dispelled. The conjunctival test in conjunction with the Von Pirquet, both being positive is considered a strong proof.

The Moro test another safe reaction that may be used. After all, the only positive proof is finding of the micro-organism, which as a rule can only be done in operative cases where a section of the gland can be obtained. In glandular cases constitutional symptoms as a rule are not marked. Should they be marked, we would naturally think of other involvements. Upon the proof of tubercular conditions elsewhere we would also base our diagnosis to some extent as to the glandular condition.

If suppuration has developed the discharge should be examined. We would look for the primary foci such as bad teeth, stomatitis, ulcerations of the mucous membranes of the mouth, hypertrophied tonsils with a catarrh of the mucous membranes and the post-nasal catarrhal condition, otitis media, mastoiditis, eruptions affecting the scalp, skin, tongue, or lower lip. Conditions following German measles, bronchopneumonia, scarlet fever, infections affecting the scalp during a case of diphtheria, infections of the axillary and upper chest and infections of the hand or limbs which might be specific.

If the sputum is obtainable, in some cases, it may be wise to examine it, also the stool, also the blood. Examine for enlarged spleen. In case of simple adenitis, one is apt to have higher temperature. If the adenitis is persistent, it is looked upon as tubercular. These inflamed glands may coalesce and form a large tumor mass. X-ray not much use as a diagnostic factor.

Differential Diagnosis. Special features aside from the existence of tuberculosis elsewhere relating to a differentiation from the enlargement of simple inflammatory adenitis are lymphatic leuchemia and Hodgskin's disease.

The persistency of the mass without acute inflammatory signs particularly in the absence of such exciting causes as the acute infectious diseases, the poor health, sufficiently characterizes the condition to excluding a simple glandular abscess. Absence of leucocytosis which always accompanies lymphatic leuchemia is easy to determine by examination of the blood. It is sometimes difficult to differentiate accurately between the lymphatic tubercular lymph nodes and lymph adenoma of Hodgskin's disease.

In general, it may be stated that in the latter condition suppuration rarely takes place and the glands are usually firmer, harder, and less tender than in tuberculosis.

Although they may obtain a large size they are more often discrete, less adherent, to one another and to the surrounding parts and rarely fuse into large masses, but tend to preserve their individuality, and as a rule are somewhat movable under the skin. The condition is less frequent in children though it may occur at any age.

In Hodgskin's disease, the site of enlargement is usually in the lower part of the neck, while the reverse is true in tubercular cervical lymph adenitis. Tuberculosis may exist in both conditions, fever may be present in either case; it is probable that the opthalmo-tuberculin test when the diagnosis is obscured will help out. There have been several cases reported presenting clinical pictures of Hodgskin's disease which were found to be tubercular at autopsy.

Sternberg and Mussed are quoted by James as being of the opinion that the glandular enlargement of Hodgskin's disease is tubercular in character, thus explaining the regular fever which so often is present.

Dr. D. M. Reed and W. B. James, however, report negative results from inoculation experiments and careful study of glands in a number of cases in Hodgskin's disease.

Lymph Adenoma is usually congenital, grows rapidly, no limiting capsule, softer and not tender, and less inflamed; no nodulation, is rare and belongs to the young adult life more than to children and more than one gland affected and all glands begin to grow at once, and no extension to other glands.

Sarcoma involves several glands, grows rapidly unless removed. Generally terminates fatally in a few months. Kerley says in case of possibility of mumps the parotid gland is involved and swelling is situated close to the ear with the space posterior to the lobe filled in by that portion of the parotid gland.

Carcimona secondary and very unusual in children. Leuchemic Hyperplastic is general and not inflammatory. We always have a blood condition and absence of leucocytosis. If we have a condition pointing to syphilis it is best to do a Wasserman.

Prognosis. Fischer's table of 1273 cases shows 57 per cent cured, 21 per cent recurrence, 13 per cent died. Dowd also reports operating on 100 favorable cases without a mortality and scars scarcely to be seen. Freedom from recurrence, 75 per cent; ultimate recovery in 90 per cent; less favorable cases the ultimate cure about 70 per cent, and cases treated other than surgical, chances of improvement much less and greater possibility of their recurrence. The diagnosis being based on history and the bacilli in the discharge from the abscesses.

Otis, by the tuberculin test obtained positive reaction in 62 to 69 per cent. Many cases recovered after surgical intervention.

Neglected cases are a menace to the life of the patient since they may be followed by diffusion of the bacilli and development of a fatal form of disease.

Holt says that one-half of the tubercular glands suppurate. The external nodes are never the cause of death. Prognosis is always good excepting cases where tuberculosis developed elsewhere. Then the prognosis depends upon the other conditions.

Dowd reported 309 cases treated by operation. Of these 65 per cent apparently were cured, 18 per cent living and presented evidence of tuberculosis, local or general. 16 per cent died.

If the gland is destined to suppurate the peri-glandular inflammation and adhesions form more extensively in the deeper glands than in the superficial. These soon implicate the skin, suppurate and discharge. In time the affected glands mat together into an irregular swelling being indistinguishable individually. One after another discharge often through different openings.

Prophylaxis should be both to protect the patient and others in case there are complications of pulmonary tuberculosis. See that the patients have proper air, sunlight, food, milk and meat. Look after the condition of the post-nasal cavity, adenoids, tonsils and throat in general.

CASES

Treatment of Tubercular Lymph Nodes. The general treatment consists of a tonic and supporting measures, supplemented by local procedures which works very well in incipient cases. There is always a class of cases suited for surgical interference together with the post-operative treatment by X-ray and tuberculin. For the incipient cases, we will begin with the out-door air which means out-door treatment altogether and may be mountain air or sea air, which the French and English have come to believe a great deal in. The English have founded the Royal Sea Bathing Hospital at Margate, England, where they have done some good work.

Dr. Brennan, the prime organizer of the R. C. Breeze Hospital, where we all know of the good work being done every day.

France, through her various seaside sanitoria, during the past 20 years treated some 60,000 of this class of cases with a favorable result in 59 per cent. Of the 59 per cent, 43 per cent were glandular cases.

Medical Treatment. Cod Liver Oil and Maltine, one of Dr. Winter's favorites. Is good in cold weather especially.

Butter is a good way also of giving fat.

Syrup iodide of iron from 5 to 20 drops after meals is good.

Creosote drops 1 to 3, 3 times a day.

Arsenic in the form of Fowler's solution, drops 1 to 3, 3 times a day with plenty of water.

Arsenic and arsenicum iodide 3x.

Hypophosphates, guaiacol drops 2 to 5 internally every 4 hours to be given on sugar.

Locally can use guaicacol.

Dram to the ounce of lanolin rubbed into the gland well twice a day. Also can use ungentine iodide 5 to 10 per cent.

Some preparation of iron manganese can be given.

Hepar sulphur, mercurious, and silicea.

If indications of suppuration, if catarrh and cutaneous eruptions are present, can use graphites or sulphur.

McDuffie gave garlic 20 drops of the expressed juice or a drop of the essential oil 3 times a day. He also made poultices of the crushed bulbs, one part to 3 of lard and applied locally. He also gave phosphorus.

Specific Medications, such as tuberculin which is unquestionably good in many cases.

Bandelier and Roepke in their new book say that in the cutaneous test they observed an increased reaction in surgical cases, but a negative action in fungoid tuberculosis. They also say that the cutaneous test, the best one to use; that it fulfills the first axiom in all medical treatment. Not best to use too large a dose at first, but can get up to it gradually. Can be used in conjunction with other methods. It is believed that some day it will limit, and in some cases replace the surgical measures. It is thought to be essential in fungoid cases.

Kramer considers it the most important curative agent in glandular tuberculosis. Starch, Rhomer, Peiper, Jochmann, Scherer, Ullmann, Dumas, Lawson, Floyd, Latham, Heubner, Boginsky—all agree that small doses of the old tuberculin good in glandular tuberculosis. It is thought to be good in conjunction with the Bier's treatment.

Schlossmann says we should use large doses for some time; but begin with small doses. A child can take 1-10 to 1-2 as much as an adult. 5000 c.m.m. up to 500 c.m.m.

The subcutaneous method when used before the enlargement is noticeable will produce a reaction in the glands

Iodoform inunctions and iodoform 3x internally.

Lewman believes that along the Great Lakes we can get good results; also Morris thinks that the country air is good with plenty of suitable diversion, recreation and exercise.

We must not leave out the fact that we must have plenty of rest and sunlight. The diet should be nutritious and easily digested such as eggs, beef, meat juice, fresh vegetables, cereals, and ripe fruit.

Surgical Treatment. X-ray has been used as a guide when to operate and in fungoid cases. Simple incision made over the fluctuation and no greater in length than is necessary and made transversely, is thought to be the best one; although some good results are produced with the horizontal incision, guarding against the blood vessels.

The incision may be made with blunt pointed scissors and a groove director. When well opened can curette.

Mayo used iodoform emulsion, or tincture of iodine and closes the wound. Can use zinc chloride 40 grains to the ounce, or can pack with iodoform gauze.

Jenners reports from Children's Hospital in Berne, shows result of 69 per cent cured, 21 per cent developed tuberculosis of the lung, 8 per cent other organs.

Van Norder found that 28 per cent developed tuberculosis elsewhere.

Breslin, Finkelstein and Fischer varied from 10 per cent to 30 per cent.

Wohlegremuth reported cured from number of operation 24 per cent, incision and curetting 63 per cent, extirpation 70 per cent.

Dowd operated 100 cases from the St. Mary's Roosevelt and General Memorial Hospital and private cases, of incipient ceses, thoroughly removed the glands and had no deaths. All healed except four cases, 90 per cent recovered. He also says we should not fear the scar and should choose the transverse incision in most cases. Should look out for the internal jugular vein, spinal accessory and facial nerve. The sterno-cleido-mastoid muscle and thoracic duct, may get paralysis of the depressor labi.

Locally can paint the throat and tonsils with iodine or potassium iodide; should look over the teeth.

External Treatment of the Glandular Swelling. Can apply iodine, ichthyol, or resorcin ointment.

Bonney has seen X-ray applied to the swollen glands with good effect, but says should be used with great care and that it is contra-indicated if softening and caseation has begun where he advises surgical interference.

Sahli believes tuberculin good in incipient cases, but should not be used to too high tolerance, if the patient not already over loaded with the tuberculin.

Cutaneous reaction better than the injections. It acts by stimulating naturally healing, to increase the anti bodies and to produce the tubercular amboceptor.

Summary. First the disease is a serious one and often leads to development of disease elsewhere in the body. Second: Records from thorough removals show better results than partial removals or palliative measures. Prognosis better in children than in adults.

NURSING MANAGEMENT OF BREAST FED INFANTS

BY CHARLES WHITE BERRY, M.D.
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STARTING TO NURSE

When a child is born and takes the breast well, the usual supposition is that there is nothing more to be done or said, the child is started on its way for the next year, with a smooth pathway for its tiny feet to tread.

There is no greater mistake, few mothers know or realize anything about the hygiene of nursing, the importance of regular feeding hours, quantities to be given, care of breasts, maternal health, etc., nor of the catastrophies that follow the neglect of such precautions.

Most mothers when asked: "How often do you nurse the baby?" will reply: "When it frets;" the breast seeming to be the easiest way to quiet a fretful child, without regard to the fact that many a sick baby is made worse by this mistaken kindness.

While fully realizing that all children are not alike and that there are such things as nervous babies, colic, teething and indigestion, I claim that the majority of infants can be made anything from a blessing and a joy forever in the home, to an unmitigated nuisance, according to the way they have been cared for since birth.

There is an old saying that it is as easy to form good habits as bad ones, and the human being seems to adapt itself to almost any established routine that may be adapted and persisted in. It is only a matter of observation to see the difference in children brought up according to the light given by modern science (excluding fads), and the old haphazard method of our forefathers.

The family physician here has a duty to perform which is more or less arduous according to the material he has to work with; there are fewer harder or more thankless tasks than to attempt to guide a screaming, fretful little one along the path it should go, with the aid of a careless, slovenly mother.

In the case of the new born babe, what can he do? First, do not leave it to the nurse, or each one of your little patients will be started on a different route, and some of them will get the worst of it.

Have your instructions start at the beginning, and have them clear, concise and covering every detail, meet every upset as it comes.

After the baby has been bathed and clothed, and the mother has had a short rest, there is no reason why the little one should not be put to the breast for a trial at nursing. I say a trial because sometimes it is easier said than done; some children will take the breast and start nursing at once and continue without further trouble, others will not take it no matter how much effort and care is used. What are we to do in such a case? First, be sure the baby is all right. Prolonged, hard labors, instruments and birth accidents sometimes are the cause of grave brain lesions, the results of which are not apparent for some time, in other cases the presence of illness as eclampsia or severe shock in the mother, would of course contraindicate any nursing for the time being. But if all is as it should be with both mother and child, we can help quite a little in getting the baby started.

Before every morning nursing clean the nipple well with sterile water and a soft cloth, the nipple should be pulled out and manipulated a little with the fingers so the child can grasp it readily. Inverted or defective nipples are a problem by themselves. If in spite of patient, intelligent effort, the child still refuses to nurse, feed a teaspoonful of warm sterile water with a medicine dropper, and after seeing that he is warm and dry, let him sleep if he will for a few hours, and try again, until your patience is rewarded. This would be all right if it worked out in each case this way, but many times instead of dropping off quietly to sleep according to schedule, the child commences to fret and screams at the top of its lungs, not acting at all as the books say it should. This is where your tact and ingenuity come in, the babe may be hungry, if so a couple of teaspoonsful of 5 per cent milk-sugar solution (one to two ʒ of milk-sugar to one ʒ of sterile water) given in bottle, medicine dropper or by spoon, will generally solve the difficulty. or a little breast milk. pumped or squeezed out and diluted with warm water can be used in the same manner. If the child does take the breast, and after nursing a few minutes lets go fretting and crying, a little of the sugar solution can be used to help out until the milk secretion is better established.

For the first few days until the breast feedings are well started, the nursings should be repeated at four hour intervals, or if the child is not satisfied and rebels, gradually shorten to two hours if the indications point that way. After you have got a satisfactory start, keep on at two to two and one-half hour intervals for the first month. Make a nursing schedule of ten feedings for the twenty-four hours, about as follows:

6, 8, 10 a. m., 12 m., 2, 4, 6, 8 p. m., and twice in night. I think it a good plan to wake the baby in the day time at the nursing hour from the very beginning, and let them sleep at night as long as they will, even the entire night through, if so disposed. Once in the twenty-four hours an infant will take a long sleep, and if it is so trained that this takes place at night the mother and family will be the gainers. Many a mother says she is so glad to let her baby sleep a long while in the day time so she can get her work done, but pays dearly for it by the inevitable concert at night.

Breasts should be alternated for the nursings, you will often find that a mother thinking that the baby does not get enough from one breast gives it both at the same nursing, which is bad for many reasons, one of which is that constant use of the breast is likely to cause a sore nipple.

If the child wakes between times and is fretful, do not feed to sooth it, but examine napkin, etc., to make sure that it is dry and comfortable, impress the mother with the fact that a little crying does no harm, and that she does not have to rush and pick the baby up the moment she hears its voice.

I do not think that the scrubbing an infant's mouth gets daily is needed, if the nipple is washed well with sterile water each time before and after nursing, there will be little or no trouble with the babe's mouth, and it is almost impossible to wash out an infant's mouth, no matter how carefully it is done, without injury to the delicate mucous membrane in some places and thus opening up a place for the entrance of infection. A spoonful of sterile water given the child once in a while between feedings will clean its mouth and quiet it until nursing time.

Regularity of nursing in multipara is often interfered with by the fact that each time the child is put to the breast the mother has severe after pains, and so she keeps the nursing away as much as possible, and perhaps even uses the bottle. A little oversight and management will usually bridge this difficulty. After the mother has got so she can get around a little, but has not got her full strength back, a tonic is usually given to increase appetite and help bring her back to normal as soon as possible, the end result being good for her and bad for the baby. What usually happens is as follows: She gets a good appetite and eats heartily, but is not strong enough to get around very much, or for some reason does not do so, the usual amount of food causes the secretion of a heavy rich milk, which the baby cannot digest properly, and colic and indigestion follow, and then some one tells her that the milk is poison for the child, and nursing is promptly stopped, and the little one started on the bottle. The following cases illustrate these conditions and the proper treatment:

Thos. O'C., age three weeks, born at term, normal labor, breast fed at two hour intervals, stools at first yellow and pasty, then full of white lumps, now green and watery, three to four daily. Examination negative except adherent prepuce and excoriated buttocks. Milk supply abundant. Specific gravity 1037, cream twenty-four hours 7 per cent, mother eating heartily and taking no exercise. The diet and exercise were regulated and three teaspoonsful of sterile water was given to the baby with each nursing. One dose of castor oil was given to child (13) to correct slight indigestion caused by heavy milk, and zinc ointment used on the buttocks. Trouble ceased at once, stools became normal.

Ralph L., age three weeks. Normal labor, took breast four hours after delivery, and every two to two and one-half hours since, stools good at first, now four or five daily, yellow, loose and watery. Vomits a little each day, has screaming spells as if in pain. Examination negative, except naevus on eyelid. Milk supply very profuse, specific gravity 1040. Cream twenty-four hours 4 per cent. Mother taking tonic and eating very heartily of meat, eggs, etc., and takes no exercise. Directions given as to exercise and diet. Milk diluted by giving child sterile water with each feeding. Later examination of milk showed specific gravity 1033, cream 8 per cent. Child doing well.

NURSING INTERVALS

Any change in an infant's feeding habits should be made gradually, so that when the time comes to lengthen the time between feedings from two to three hours, do it by successive changes of 15 minutes at a time, so the baby does not notice the change. While the following is not a hard and fast rule, it is adapted to most babies.

Up to one month, 2 hour intervals; two to three months, 2 1-2 hour intervals; four months, 2 3-4 hour intervals; five months and over, 3 to 3 1-2 hour intervals.

Drawing out the nursing intervals, even in the new born, to four hour periods, has some enthusiastic advocates, especially in Europe; my own experience has been that very few mothers will adhere to such a schedule, and even if they did the results are not better than those obtained with shorter intervals.

If the rule to wake the child at nursing time in the day and let it sleep as long as it will at night has been observed, at five months the child will wake only once during the night for a feed, and often will sleep the entire night through. The physician should work along the theory that once in the twenty-four hours the stomach needs a rest, and so the quicker the night feedings are dispensed with the better, no child should require to be nursed at night after eight months.

Many times when the baby cries in the night, the mother tired and sleepy, gets up and takes the child to bed with her, and after starting it on the breast, dozes off to sleep, the baby retaining its hold on the nipple also sleeps a little, wakes up at intervals, sucks vigorously for a moment and drops off again, sometimes continuing this for the entire night, and then afterward for many nights in succession, forming one of the worst nursing habits there is, occasionally the overworked stomach rebels and empties itself by vomiting, but more often the result is a severe attack of indigestion, with its attending symptoms and discomforts. When nursing is necessary in the night, the mother should nurse the child the usual time and then return it to its crib and leave it there. Prolonged night nursing beyond the ninth month does harm to both babe and mother, the following case is an example of the results of such folly.

Alfred A. (case 31), one year old. Normal labor. Nursed since birth, and now takes table food and nurses all night, never sick before. Very restless last few nights, jumps in sleep, had convulsion early this morning. Examination shows very large fat baby of good color and firm muscles, coated tongue and rectal temperature of 102 1-5. Diagnosis, gastric indigestion due to overfeeding. Under usual treatment child made prompt recovery.

There is only one rule in regard to the above, and that is DON'T. The little one should always sleep alone, when in bed with its mother it wakes every time the latter moves, and under such conditions the temptation to soothe it by aid of the breast is very strong. Often you will find nursing prolonged beyond the second year as a guard against pergnancy.

INADEQUATE MILK SUPPLY

Sometimes after nursing has been going on smoothly for a time, a mother will complain that the child does not seem satisfied, or is always hungry, is fretful, fusses, does not sleep well, or only a very short time, nurses half an hour or more and then cries when it lets go of the nipple. If weighed regularly (and every infant ought to be) the weight is stationary, or else the child loses. The mother nurses it oftener, then gives it both breasts at the same time, then perhaps some artificial food between the feedings, with the usual colic and indigestion that follows such practice, or often puts it on the bottle entirely. Now such a case can be helped greatly, in the first place the more the mother worries and frets over the situation, the worse the condition becomes, a vicious circle, so the quicker you can get the child satisfied and happy the better for all concerned. See if the milk supply is really scanty, weigh the baby before and after nursing, see what it gets at a feeding, examine some of the milk from the middle of a nursing, find out what you can in regard to the quality. If the quantity is small, or the milk poor, help out with an artificial food, giving an appropriate quantity after each nursing, until by the aid of tonics and proper feeding, you can bring the breast supply back to a normal condition, sometimes you will fail in this, in some mothers the milk only seems to last a couple of months, and then gives out entirely, but an effort is worth the while in every case. Do not let the bottle replace a nursing, the milk will not be secreted unless the breasts are used, and the supply will fail you entirely, better to allow the child to nurse for twenty minutes if it will, and then give enough in the bottle to satisfy it as a sort of desert. Often you will find that for many feedings especially as the milk gets better, that you can dispense with the supplementary feed for several nursings. Make out some nursing rules for the mother such as follows:

Regularity of nursing is essential, as the composition of the milk varies with the intervals between the nursings (shorter the interval, the richer the milk). Nurse according to the age of infant, from two to three and one-half hours, once or twice at night. When amount of milk is sufficient babe will suckle fifteen to twenty minutes, then drop off to sleep, if he tugs at the nipple for half an hour, and then frets and fusses, there has not been enough milk secreted.

Diet of Mother. Three meals a day at about five hour intervals, as 7 a. m., 12 m., and 5 p. m.; take nothing between meals but plain water. Food should be plain and easily digested, and such as the mother has always been used to, meat, milk, eggs, fish, vegetables, cereals, fruits, etc. Take little or no tea or coffee. It is a mistake to turn from a regular diet and fill up on gruels and patent foods, in the hope of making more milk, the stomach is overtaxed by these, and the results are bad. Avoid highly flavored foods. Kidneys and bowels should be kept in order, otherwise products that they should carry off will be excreted in the milk. Great care must be taken by nursing mothers in regard to medicines, as many kinds are carried off in the milk. The way to make a plentiful supply of good milk is to use the breasts, the less they are used, the less milk there will be. A bowl of corn meal gruel at bed time is sometimes a help, if it is digested without any trouble. Mother should be kept in a cheerful state of mind and secure unbroken sleep at night, anxiety, fright, fear or other nervous disturbances are a cause of sudden and great variations in the composition of the milk. Mother should get a walk in the air every day, also plenty of exercise. Any nursing disturbance during menstruation is usually only temporary, and may not recur at the next period, if severe trouble results use the breast pump at each nursing time, and give the babe bottle until period is over, when nursing can be resumed.

What is a good food to give the baby to help out nursing? I have had the best results with cow's milk properly modified to suit the child's age and weight, commencing with a weak formula at first and gradually working up to one suited to the case, for example, a child of six months of average development and weight, should be able to take without trouble:

Whole milk, 9 oz.; sterile water, 8 1-2 oz.; lime water, 1-2 oz.; milk sugar, 2 1-2 tablespoonsfull. Divide in six bottles, three ounces each, give one after each nursing.

When the milk supply is of good quality, but deficient in quantity and there is no way of keeping fresh milk, or a careless mother is to be reckoned with, good results can sometimes be obtained by using one of the infant foods which are prepared without the addition of milk, depending on the mother to supply enough fresh food to balance the diet properly.

CONDITIONS THAT INTERFERE WITH NURSING

Many times a child will be brought to you with the following history: The baby is very cross and fretful, will not take the breast, sucks for a minute and then spits out the nipple, in spite of all the mother can do, although there is an abundance of good breast milk. In these cases examine the child's mouth carefully, for the different kinds of stomatitis, ulcers of the fraenum, and other local causes, that would cause pain when the baby nursed. Coryza is a trouble that is often present, the child cannot nurse unless it can breathe through its nose, if the latter is obstructed it has to stop nursing to breathe. Sometimes a baby will be perfectly well, and yet will not take the breast, except at long intervals for a few days to the mother's great anxiety. I have also seen a child refuse to take the breast again after one or two feedings of sweet food like condensed milk, given to it in the absence of the mother on a shopping tour.

Serious illness of any kind interferes with nursing, and it is a good working plan in all such conditions to dilute the milk by giving the child some sterile water with each nursing, until the digestion is again normal. Sickness of any kind usually upsets all nursing schedules, and often baby recovers completely spoiled, and has to be trained in good habits all over again, there is no need for this. The indications for regular systematic nursing (usually diluting the breast milk) are stronger during an illness than any other time, and also is one of the greatest aids to a prompt recovery.

A badly fissured nipple or inflamed breast will sometimes necessitate a temporary withdrawal from the breast. So will severe illness in the mother.

Pregnancy is an indication to stop nursing on account of the strain on mother, but where both she and the child are doing well, I have carried a nursing babe through a hot month or two without trouble with a three months' pregnancy.

Effects of different foods taken by the mother, on her milk supply seem to vary with her own state of health and habits. I have seen a mother calmly eat all kinds of indigestible and highly seasoned foods, garlic, onions, mustard, pepper, vinegar, etc., with no effect on a perfectly happy and contented infant on the breast, and other cases where a very prompt upset, followed a feast of lobster and watermelon. Each case of this kind seems to be a law unto itself. The best advice to give is to recommend a simple, easily digested diet, of such food as the patient has always been accustomed to. Malt, liquors, and different preparations of alcohol are not needed for the milk supply, and are better left out, also the pot of tea standing on the back of the stove, with its constipating and healthy appetite destroying effects.

WEANING

When is the right time to wean a baby, will be a question often asked. The time varies according to conditions; you will find the idea firmly rooted in the average woman's mind, that the baby must be nursed during the so-called second summer, no matter how much it may prolong the nursing period. It usually works out like this: The baby is about nine months old in June, the mother's milk is poor in quality and rather scanty, so the child is not satisfied and has to be fed, this is usually from the family table, or perhaps a bottle of some cherished formula that all her children have been raised on. The breast is given in between the feedings to keep the child well, the result being the ordinary indigestion of the hot months, and unless there is some vigorous straightening out, a sometimes fatal result. Now, I would rather have an infant on the breast in the hot weather if it was doing well, than on any kind of food, and do not advocate weaning at this time, just because it has arrived at a certain age, but if it is not doing well and has to be fed, there will be more harm done by improper feeding at that time of the year than in the cooler months, but it must also be realized that cleanliness, use of ice, and care in the preparation and administration of the food, are essential to success.

With this in mind there is no reason why the baby that has arrived at the weaning age or whose breast supply is failing, should not be put on a proper food at any time of the year.

The best way to accustom a nursing child to artificial food is to approach the matter gradually and extend it over some time, about as follows: The child is supposed at this time to be about nine months of age, and on a regular nursing schedule of three to three and one-half hours, nursings during the day, with no night feedings; if he is not, get him accustomed to this before you start to wean him. Then commence to replace one feeding at a time, with a properly prepared food suitable to his age, try him well with one kind first, and get him accustomed to it before you start another. Cut out one of your morning nursings, and replace it with eight ounces of cereal gruel and milk, half and half at first, then 2-3 milk and 1-3 gruel, sugar to make six per cent. Continue this for a week, then replace an afternoon feeding with a meat broth made with rice and barley. Keep on this way a week longer, and then gradually replace each of the other nursings with a properly prepared food, giving five feedings a day, thus replacing the breast with artificial food, with slight trouble, and little or no loss in weight or development. You will usually have more trouble with the mother (sympathy) than with the child. Later these feedings are gradually replaced, the same way with solid food appropriate for the child's age and number of 24 hour feedings reduced to four.

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APPENDICITIS IN EARLY CHILDHOOD*

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I do not come here to tell you how to diagnose appendicitis in infancy and early childhood, because I have seen just enough of this condition to be conscious of the fact that I have much to learn about its recognition. You might wonder at first instance why this should be a matter for the pediatrician to be discussing under any circumstances. I think you will grant that the man in general practice, or the children's man, is the one who sees these children in most instances from the onset of the illness, who is, therefore, in the best position to observe the process and to protect the child's life by calling in the appropriate assistance.

I am considering very early childhood and the four cases

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reported here are all three years of age or younger. That at this very early age this condition is rare is readily granted, and that the diagnosis is usually much more obscure than in older children is also, I think, readily granted. This lack of clear-cut symptomatology is not only felt by the medical man alone, but I have observed that our most skillful surgeons share the reluctancy to reach a positive diagnosis at once. I feel, therefore, we all may at least be stimulated to bear in mind this condition in considering appendicitis as a diagnosis at any age in a child.

Before proceeding to the consideration of these case reports, a few words concerning some of the points, as frequency, mortality, etiology, diagnosis, from the recent literature seem desirable.

Frequency. Comby[1], the great Paris pediatrician, in a review of 139 cases of chronic appendicitis, says this condition is much commoner than is generally recognized. Collinson[2] states that appendicitis is the commonest and most important surgical disease of the abdomen met in childhood, with the largest number of cases occurring over five years of age. Simpson[3] called attention to the increased frequency with which this condition has appeared at the Liverpool Infirmary for children in recent years. Wade[4] considers mild cases are often overlooked and that the disease is commoner than is generally supposed. Our own Deaver[5], in a remarkably complete article on this subject, with 500 case reports, says that appendicitis in childhood, characterized as it is by a subtle and insidious onset, rapid progress and obscurity of symptoms, is a disease of the most profound importance, and it well merits more attention and study than has hitherto been bestowed on it. Likewise Werner[6], Marvel[7] and many others are of the same opinion regarding its frequency, although all admit it is much rarer under five years of age.

Mortality; Prognosis. While the mortality depends to a large extent upon when the child comes under observation, and is constantly being reduced as early operations are becoming increasingly more frequent, nevertheless the mortality is apparently excessively high where a large series of cases are considered. It must be remembered, however, that, where large series are consulted, probably many or all of these are hospital cases from homes where the intelligence and care are such as to neglect all medical attention until the process has progressed for days. Salzer[8], in 163 operated cases, reported a mortality of 13 per cent. Stiven[9], in 208 cases between 2 and 7 years, gave 41.8 per cent, ending fatally. Mitchell[10], in 40 cases in which the disease had extended in an unmistakable manner beyond the confines of the peritoneal covering of the appendix, resulting in gangrene or perforation, with varying degrees of peritonitis or pus formation—when we would naturally expect an excessive mortality, lost one out of four.

On the other hand, Fowler[11], in 100 operative cases under twelve years of age, has but a 3 per cent mortality with but one death in the last fifty-six cases. Deaver, in discussing this point, remarks that the prognosis of acute appendicitis in childhood is favorable if the appendix be removed early. If the patient be operated upon in twenty-four hours, the mortality is nil. Beyond this time, in suppurative cases, the mortality rapidly rises, and often the third or fourth day is nearly as unfavorable as it was favorable in the early stage.

That appendicitis may occur at any age is indicated by Dixon's[12] case. At 24 days, in a baby premature at eight months, a gangrenous appendix was found. And other isolated cases have been reported during early infancy.

Anatomy. Salzer[13] states that the peculiarities of appendicitis in childhood are based on special anatomic conditions. The appendix is relatively larger than in the adult, with the opening from the cecum into the appendix of funnel shape. He, however, does not think these facts have anything to do with the gravity of the condition in childhood or its difficulty of diagnosis. Fairbanks[14] makes the same point regarding the anatomy, commenting that it is easier on this account for foreign matter to enter into the appendix than in adults. Marvel comments on the position of the colon being high, with the appendix hanging, favors it more than in the adult, being a receptacle for its contents.

Etiology. In some sources, primarily in the literature of English writers, and by Cecil and Buckley in this country, is the oxyuris vermicularis regarded with much suspicion as a cause of appendicitis in childhood. Lett[15] remarks that Still, of London, in 200 postmortems in children found threadworms in thirty-eight children under 12 years, in twenty-five of whom they were found in the appendix. They may be present without giving rise to any symptoms or they may produce an inflammation of this structure. Cecil and Buckley[16] are the especial advocates of this as the etiology of appendicitis in childohod in America, asserting that 17 per cent. of the cases of appendicitis under their care showed oxyuris or trichocephalus. In a subsequent paper Cecil and Buckley[17] even go so far as to assert that there is a definite and characteristic form of appendicitis caused by worms. Deaver, in his report of 500 cases, says worms may be described in a causative role when in large numbers they block the lumen of the appendix, cause colic and injure the mucosa superficially by trauma. The exciting cause, however, is usually, he asserts, the bacillus coli communis which is ever apt to invade the walls of the appendix through a portion of the mucous membrane made vulnerable by the predisposing cause.

CASE REPORTS.

Case 1. Clarice, age 3 years, first came under my observation in October, 1911, with the history of a badly coated tongue, fretfulness, eating and sleeping poorly all summer. Constipation was marked. Occasionally she went twenty-four hours without a movement. The examination I made at this time was negative. The note made on the abdomen was abdomen soft and full. She was given tr nux vomica drops 2, three times a day, sodium phosphate ½ teaspoonful each morning and a diet.

On January 24, 1912, the mother called up from the Puget Sound Navy Yard, where the father was stationed, saying the girl had been running a slight temperature for about six days, about each second day with a "kind of a chill," no nausea. On January 25 I went over to the yard, and there found her lying asleep, with easy breathing and pale color. On waking, hearing was rather poor and she acted very fussy. There was no retraction of head, no rigidity of neck. The tongue was thickly coated; the throat was injected; photophobia was present; the chest and heart were normal. There was a questionable rose-spot in the axilla. Abdomen slightly distended. My notes say, "Voluntarily held rigid, fussy, no true spasm. Liver palpable, one finger's breadth below costal margin. Spleen not palpable. No definite tenderness made out in abdomen. Extremities—all can be moved freely. Knee jerk obtained. No Kernig. White count 9,600. Urine: no sugar; sediment, few leucocytes and squamous epithelial cells; no motile bacilli. Blood smear; no malarial plasmodia. Differential count—polynuclear leucocytes 77 per cent. Lymphocytes: large, 3 per cent: small, 17 per cent. Widal negative. Stools yellow, smooth but constipated.

From January 25 to February 3 she ran every day or two a temperature which would reach 103°, usually at night, and each day she sat up in bed, playing with paper dolls. A second

Widal was negative. She was brought into the city for close observation on Feb. 3, when another Widal was negative. The white count now was 9,000. The cutaneous tuberculin reaction was negative. Drs. S. V. R. Hooker and C. W. Sharples were seeing her daily at this time. On Feb. 7 three teaspoonsful of aromatic cascara were given, from which two large, loose but formed movements resulted, simultaneously distension increased, spasm and tenderness appeared definitely for the first time; the white count jumped to 17,000; the differential showed a sudden rise in percentage of polynuclears, 82 per cent, 10 per cent lymphocytes, 3 per cent large, 3 per cent transitional.

An exploratory operation was now considered necessary. Operation by Drs. Sharples and Hooker. A catarrhal appendix was removed and immediately a normal convalescence was begun. She has been perfectly well since.

Case 2. Marion, aged 3 1-2 years, the daughter of a physician, I first saw at 13 months, in consultation with Dr. H. A. Shaw, in a severe gastrointestinal infection with marked toxemia, from which she convalesced slowly. She developed into a splendidly nourished and healthy appearing child.

On Oct. 9, 1913, I was called in consultation by the father, when I found the child complaining of pain in the head and right leg, sleeping a great deal and vomiting everything, even water; stools were yellowish, contained no curds, no mucus. The temperature was 99°. The throat was negative, the chest clear. The abdomen was slightly distended. The stomach was washed out. The white count was 7,400. Urine acid, no acetone, no albumen, no sugar. On Oct. 11, at noon temperature was 100°, the white count 11,400. Abdomen distended, tympanitic, no masses, no tenderness. Urine—occasional hyalin and fine granular casts. She was now keeping down a little nourishment. Oct. 12, white count 10,000, no vomiting for twenty-four hours. From this disturbance she made a rapid convalescence.

March 1, I again saw her with a temperature of 103.4°, respiration 35, pulse 140, vomiting for 24 hours, with a slight amount of spasm in the right lower quadrant of the abdomen and considerable abdominal distension. The chest, ears, throat, urine and hips were negative. She had complained for one week that the right leg hurt her and it was slightly flexed at the examination. The white count was 17.000, differential 87 per cent polynuclears. At 10 p. m. the temperature was 102.8°. She was still vomiting. the abdomen was distended. there was slight spasm of the right lower quadrant.

Those in consultation agreed that an exploratory operation was advisable. Dr. Shaw removed a slightly inflamed catarrhal appendix. She made a rapid convalescence and is perfectly well.

Case 3. Baby F., 1 year old. was seen in consultation with Dr. C. B. Boudwin. with the following history: Full term baby. born in an instrumental labor, but in good condition. with birth weight of about eleven pounds. Breast-fed for fourteen days. when. on account of a milk leg and a high fever developing in the mother. suckling was stopped. The baby was perfectly well until this illness. ten days ago. started with fussiness and being easily tired. For one day at this time fever was high. There was no vomiting. The movements were mostly constipated. yellowish and undigested. During the last few days he has had a little fever. lying mostly curled up on his right side. but has appeared bright until today; now acts real stupid.

Physical examination. Movement was partially formed. pasty. and contained numerous large and small curds. The infant was pale. breathing easily. lying curled upon the right side. There was no rigidity of the neck; no retraction; mental condition clear; throat normal; chest normal. The abdomen was moderately distended. markedly rigid. with marked tenderness localized in the right lower quadrant.

This case was the only one of the four which clearly presented at first examination anything like the customary group of symptoms. Operation was immediately advised and Dr. Boudwin found a large appendicular abscess which was drained and the child made a fine convalescence.

Case 4. Richard. aged 2 1-2 years. the son of a physician. was first seen by me in Oct., 1913. when for about two weeks he had follicular tonsilitis with an otitis media of the right ear. During this time he ran a temperature from 100 to° 103 1-2°. with a white count of about 13,000, and what might be called a very mild, acute nephritis. His convalescence was slow and mucus persisted in the stool for several days. Since then he has been well, with an occasional, slight gastrointestinal upset, at which time, lasting for a day or two, he complained of the right leg.

On Aug. 8 I was asked to see him again, with the history that one week ago he vomited with the diarrhea, and temperature of about 100°. He was thoroughly cleaned out, starved for twenty-four hours, started on gruels, and was up and progressing well until two days ago, when he suddenly complained of pain in the abdomen, with some distension. There was no vomiting, temperature was 102°, which continued until the time I saw him, pulse 130, respiration 40, with an expiatory grunt. There was dilatation of the alae nasi. The abdomen was distended, tympanitic. There was no localized tenderness. Over the left, lower chest in front were numerous fine rales, with no alteration in breathing. The localization of these rales, the grunting respiration, suggested a diaphragmatic pleurisy, and I even went so far as to express an opinion that the trouble was not in the abdomen. The white count at this time was 16,000, the urine was normal, the differential blood count was 79 per cent polynuclear leucocytes. At this time he was also seen by two surgeons who advised waiting.

On Aug. 19 the picture was more clearly that of appendicitis. The child was pale, somewhat septic looking; the abdomen was markedly distended, and tenderness with dullness could be localized in the right lower quadrant. The white count was 13,000, and the polynuclears 76 per cent.

All agreed that an exploratory operation was now immediately advisable. Dr. J. B. Eagleson operated and found a perforated appendix with a walled-off abscess. He is now making a favorable convalescence.

In the consideration of a diagnosis, from my own experience I have learned to regard with suspicion cyclic vomiting, starch indigestion and obstinate constipation, as factors to be closely watched in relation to acute or chronic appendicitis in infancy and childhood. That these conditions exist without appendicitis must, of course, be readily admitted. Since my interne days on the service of Dr. John Lovett Morse, at the Boston Children's Hospital, I have seen but one case, however, of recurrent vomiting which I was willing to accept as meeting the description so extensively and unhesitatingly described in some of our newer text books on children as cyclic vomiting. I believe with Crumston[18], that in each instance every possibility of appendicitis must be excluded in periodic vomiting.

Starch indigestion, particularly the more severe types with abdominal distension and occasional elevation of temperature, such as is common when carbohydrate fermentation upsets take place, as in this condition requires close observation. I have now under my care children of both these types whom I have approached in each new upset thinking this was the time when something more definitely linked with appendicitis would present itself.

That pneumonia may be confused with appendicitis in childhood is well known. That pneumonia and appendicitis may occur simultaneously is also a fact. Daussy[19] reported four cases between 2 and 12 years, where pneumonia and appendicitis were associated. I think it was Kelley who said a pleuritic empyema may be opened before the abscess of the appendix is found at autopsy. My first case closely resembled typhoid fever.

In the cases reported here, it is apparently more than a coincidence that the first definite observation, so far as the abdomen itself was concerned, was abdominal distention in the three cases that I had an opportunity to observe more than once. A curious fact is that cases one, two and four had, preceding the attack, either soreness, pain or dragging of the right leg. The white and differential counts were no doubt of assistance but, as in most border line instances in medicine, the safest and most reliable indications for diagnostic procedure lie in the clinical findings and the condition of the child. I am absolutely convinced that the safest course to pursue is not to be too confident of one's power of estimating the exact condition of the appendix.

Concerning treatment, there is space only for the words of that great American abdominal surgeon, Deaver, that the ideal treatment will be attained when all patients are operated upon early, when the mortality will be nil.

WHOOPING COUGH: ITS DANGERS AT LAST RECOGNIZED

BY SAMUEL A. VISANSKA. Ph.G., M.D.
Atlanta, Ga.

It has always seemed to me a curious phenomenon that the medical profession will, for years at a time, seem to camly accept dangers of some one disease, regarding it, apparently, as a sort of "inevitable evil," making no special effort to either allay or prevent it, until suddenly they seem to awake from a sort of lethargic indifference into a campaign against the common enemy and will "neither slumber nor sleep" until suitable clinical fetters are forged and the offender is safely restrained in medical irons.

It is particularly gratifying to note such an awakening on the part of the profession to the dangers of whooping cough, to the importance of proper treatment in this disease and to the urgent need of every possible precaution against its spread, even to the point of seeking the aid of the various health boards in our cities, and having whooping cough properly isolated, as is done in the case of other contagious diseases.

In my own private practice I have observed for some years the long train of evils resulting from whooping cough; evils scarcely second to those following measles, another disease which was once regarded very lightly.

The emaciation and general depletion of my own small patients suffering from whooping cough always aroused my personal sympathy as well as my professional pride and this sympathy was given alike to the mother as well as to the child for the duration of whooping cough, its paroxysms and the dangers following it, all combined to produce one of the most trying situations which marked my professional experience.

I, therefore, set myself to combat this ill as far as lay in my power, by seeking some remedy which should at least ameliorate the condition in some measure, although, of course, I realized the many difficulties in my way. First of all, it was exceedingly difficult to combat the theory that "every child MUST have whooping cough" just as it was, and is now largely believed that all kindred childish diseases are inevitable to the early years of life and that the sooner they are contracted the sooner (and the better) they will be over with. Indeed, I have often known mothers to remark in discussing the ills of a family of children, one of whom has a contagious disease, "Well, we might as well let them all take it at one time."

Gentlemen, it is not right to permit such ignorance to remain uncorrected and it seems to me it is our duty as physicians to inform the public generally, and particularly to impress upon mothers, that children are NOT all doomed by any law of Providence or otherwise, to contract either measles or whooping cough, or indeed, any other disease of a kindred nature.

In any campaign against whooping cough, therefore, it seems to me that we must first of all insist that children suffering from it should not be allowed to mingle with other children any more than if they had any other contagious disease. They should not play together even in the open air, or meet in any way whatever. In fact this form of prevention should become a civic law and every city and town in the country should have a Board of Health not only to make laws against infectious diseases but to see to it that such laws are rigidly enforced. These laws should now be made to apply to whooping cough just as positively as they already apply to small pox or other similar diseases and this is the first step in relieving the community of whooping cough in general.

The question, however, of handling specific cases appealed to me so strongly that in 1909 I read a paper before the Medical Association of Georgia, then assembled at Macon, Ga., in its Sixtieth Annual Session.

In this paper I presented the pathology, the etiology, the symptomatology, the complications and the treatment of this disease. It is to the latter point that I would call your attention now, for when I observe that in the August number of the Archives of Pediatrics there are not only four well-written artcies on the subject of whooping cough, but also a strong leading editorial on the same subject, I realize that there is at last an awakening to the demands of this disease and I am delighted to share with you, gentlemen, what I have already discovered regarding its treatment and possible cure.

When the paper referred to was read by me in 1909 I realized that my ideas as to the need of isolation of whooping cough patients as well as my conclusions as to the dangers of the disease were regarded as being a little advanced, but since that time I have only strengthened and enforced my earlier impressions, but in addition to the need of isolation and other precautions which I have already outlined, I also asserted then that I had had considerable success in relieving the paroxysms of whooping cough and in lessening the frequency of these paroxysms by using a preparation of concentrated passiflor incarnata (may pop). This preparation is non-toxic, it does not constipate, is palatable and leaves the little patient with no bad effects whatever. To a child one year old I begin with twenty to thirty drops every two hours and increase the dose until the paroxysms are under control. Since 1909 I have continued to use this preparation in varying proportions according to the age of my patient and my success has been uninterrupted and always gratifying. I never regarded the disease as a trifling affair as it was usually considered by the laity and it is exceedingly gratifying to me to see the whole medical profession awakening to this view of the stuation. The violent and exhausting vomiting alone would mark the disease as one of a serious nature. I have found that this symptom could be controlled very effectually by administering oxalate of cerium in fairly large doses, and I would indorse the use of this remedy when the vomiting is excessive.

I am delighted to note the present interest in whooping cough as evidenced by the excellent papers in the periodical just mentioned and was particularly impressed by one of the writers in the August Pediatrics, Dr. John Lovett Morse, who says, in part: "The relative mortality from whooping cough, scarlet fever and diphtheria is essentially the same throughout the country; whooping cough being everywhere more fatal than scarlet fever and only less fatal than diphtheria. It is an especially serious disease in the Southern states, the death rate from whooping cough on the whole being greater in large cities than small." After giving most interesting statistics to prove this statement Dr. Morse says further: "It it very evident from these figures that instead of being a "trifling affair" as it is usually considered by the laity, whooping cough is a most serious and fatal disease. In fact any disease that kills 10,000 children per annum is, as Rucker says 'a serious one.' If bubonic plague were to kill that many children in the United States in one year the whole world would quarantine against us and a child dead of whooping cough is just as dead as of plague." And Morse is, indeed, correct in his statements.

Sidney J. Meyers, M.D., has also given us an excellent article in the August number of Pediatrics already referred to, and his paper is particularly interesting in its reference to the use of vaccines and as to the benefits of fresh air, and on both these points I agree with him, as is also shown by my article written in 1909. I began this article as follows: "In presenting this subject to you for discussion let me state at the beginning that I am sure the gravity of pertussis is scarcely appreciated by the general public or by the physician and there is more criminal neglect in connection with whooping cough than with any other disease. Therefore, I feel it a duty to present this paper today. No doubt it has been painful to you, as it has been to me, to witness the intense sufferings of a large number of children during the paroxysms so characteristic of this disease. Yet many grand-mothers delight in telling how their children, at the beginning of a paroxysm would run to a chair, place their elbows upon it, give a few whoops, turn pale in the face, bulge at the eyes, and this would be followed by violent vomiting or perhaps a hemorrhage from the nose, after which the little one would soon recover and would run away and play until the next paroxysm."

I have already quoted in effect other parts of this same article and it is most gratifying to me to find the profession now with me in my own earlier conclusions about this disease. My ideas expressed in the past are now in line with those of the men who are working day and night to discover and isolate the special bacillus which causes this disease.

It is interesting, too, to notice that the vaccine treatment is giving good results and I advocate a thorough trial of this method coupled with the proper hygiene, judicious feeding and the use of the passiflora incarnata and oxalate of cerium, as already suggested.

I have noticed one of the suggestions made for marking whooping cough cases was the wearing of a badge on the child's arm, but this I deem absolutely impracticable for many reasons. It would be difficult to detect such a badge when the child was wearing an outer garment, while with a rolled up sleeve the badge would be out of sight, although it might still fulfill the requirement as to its being worn. Whooping cough cases can be isolated only in the same manner as are other contagious diseases, by having the house of the patient placarded and the patient forbidden by law to leave the premises or to mingle with other children in any way whatever.

Certain it is that at last the campaign against the disease has fairly begun and it is safe to predict that with the interest of the medical profession centered in fighting it, whooping cough will lose most of its terrors, and while it may never be regarded as a "simple childish disease," still its dangerous features may be lessened and, in time, the spread of the disease checked and its prevalence entirely prevented.

1101-3 Fourth National Bank Building.

SOCIETY TRANSACTIONS

THE NEW YORK ACADEMY OF MEDICINE

Section of Pediatrics

Stated Meeting Held May 14th, 1914

DR. WILLIAM P. NORTHRUP, IN THE CHAIR

Pyloric Spasm.—Dr. Mark S. Reuben presented this patient, the youngest of three children. The first child died of inanition at the age of three months, having presented the same symptoms as the patient except that they were more severe and persisted until death. The child probably had a hypertrophic stenosis of the pylorus. The second child was five years of age and had always been well. The patient came under observation at the age of eleven weeks. When six weeks of age he began to vomit, the vomiting being projectile in character and taking place from five to ten minutes after nursing. There was steady loss in weight and obstinate constipation. A pyloric tumor could be felt and the peristaltic waves were perceptible. The diagnosis of pyloric obstruction was made. After three or four attempts Dr. Hess succeeded in passing the duodenal tube, thus ruling out pyloric stenosis, and making the diagnosis of pyloric spasm possible. There were four to five ounces retention three hours after nursing. The infant was kept on the breast alone for four weeks, the intervals between feedings being three hours. The child continued to lose weight and all the symptoms persisted. The combined acidity at this time was from 115 to 85 degrees, and there was no free hydrochloric acid. By weighing the infant before and after feeding it was found that he was getting from four to five ounces at a feeding, and examination of the mother's milk showed it to be of good quality. Complementary feeding was instituted after four weeks. Two grains of sodium citrate were added to every ounce of milk. Immediately the child began to gain in weight and all the symptome subsided. A pyloric tumor could no longer be felt and the peristaltic waves were no longer visible. The retention in the stomach gradually diminished. The combined acidity continued to be from 100 to 85, and a trace of free hydrochloric acid was present. The points of interest in this case were: (1) There were two cases of pyloric obstruction in one family, both males; in one case the obstruction was of high grade and led to a fatal termination, while in the other it was mild and led to speedy recovery. These cases lent proof to the statement of Dr. Holt, who was of the opinion that in all these cases there was a real stenosis varying in degree in different cases. (2) The almost immediate improvement when complementary feeding was instituted. (3) The disappearance of pyloric tumor when the child began to gain. (4) The persistence of the high acidity even when the infant was doing well, proving that the spasm was not due to high acidity. (5) An X-ray of the stomach taken since the child was doing well still showed much decayed transmission of food. Therefore, too much reliance should not be placed on the X-ray findings in these cases but rather more on the clinical phase.

Congenital Hypertrophy of the Left Half of the Face in a Boy Seven and One-Half Years of Age.—Dr. Sara Welt-Kakels presented this patient, whose family history showed no consangunity, no lues, and no tuberculosis. A sister two and one-half years of age was perfectly healthy. The patient was born at the end of a normal pregnancy. The deformity was noticed at birth. There was nothing abnormal in dentition or in the time of walking or talking. The patient has had whooping cough and measles and occasionally sore throat, but has otherwise enjoyed good health. The facial-hemi-hypertrophy had retained its proportions in relation to the right half of the face. At present the enlargement of the left half of the face was mainly in the lower two-thirds, not only of the soft parts but the bones as well were involved. The enlargement of the cheek was most prominent; the upper and lower lips were much hypertrophied; the left angle of the mouth was drawn downward; the left nasolabial fold was effaced; the left half of the nose was large, but there was no hypertrichosis or coarseness of the hair. In the malar region there was a small elangiectasia about a quarter of an inch in diameter surrounded by a small pigmented area. The action of the facial muscles was somewhat interfered with by the hypertrophy, but the boy could frown, laugh and whistle. There was a slight diminution in the response to the faradic current, but no disturbance of the sensibility of the special senses. There was sometimes salivation, seemingly from the left side. The mouth was mostly kept open, the left half projecting and the upper lip forming an ectropon. The appearance of the tongue was very conspicuous. It had been said that this organ acquired form of deviated hemihypertrophy. The point of the protruded tongue deviated to the right. The left half of the tongue was four or five times the size of the right. The left half of the hard and soft palate, the left tonsil, and submaxillary gland were involved. On the inner surface of the left cheek were a few small tumors about the size of a pea. Like the cheek they gave the impression of lipomatous growth. The left upper jaw was much enlarged and thickened, especially in the alveolar portions, and the teeth were irregularly inserted. The left half of the lower jaw was also involved but to a slighter degree. The boy was otherwise fairly well developed and showed no other abnormalities. He had a good intellect.

Dr. Henry M. Stark said that in view of the fact that the lipomatous tissue of the cheek and upper and lower lips were the seat of the maximum "giant" growth, it had seemed to him that the enormous hypertrophy was not without surgical possibilities, even though it was quite possible that subsequently, and after a long while, the initial results might have to be revised. That was, that even though some of the excess tissue should now be removed, as it was proposed soon to do, there might be in time a regrowth of this tissue, again calling for its plastic removal. It was proposed to remove in several sittings enough of the excess tissue to give for the present, and it is to be hoped for a long time, a good cosmetic effect. As Dr. Kakels had said, all the histologi-elements in the region were involved in the giant growth. Should the bony structure at any time take on extraordinary growth, any attempt at plastic correction would then be out of question.

The Roentgen Ray as a Diagnostic Help to the Pediatrist.—Dr. L. E. LaFetra presented this paper. He stated that the value of the X-ray as an aid in diagnosis in surgical conditions that involved the bones and joints, and in abdominal and chest conditions in the adult were too well known to require comment. In children the value of the X-ray in fractures, dislocations, rachitis, chondrodystrophy, tuberculosis, and syphilis was thoroughly appreciated, but there were also medical conditions in which the X-ray made an early and positive diagnosis, which would not be possible otherwise and it was these that the essayist considered, confining him self to such conditions as had come under his personal observation. Enlargement of the thymus gland had been found several times simply as an incident of thoracic examination when there had been no cause to suspect it. The frequent fallacy of percussion in the diagnosis of enlarged thymus had been demonstrated by the X-ray. In several instances plates taken for the purpose of showing the extent of an empyema had revealed foreign bodies in the bronchus as the cause of broncho-pneumonic abscess in empyema. This had directed the treatment along proper lines and proved life-saving. For the detection of abscess of the lung, the extent of empyema, and also in the early diagnosis of pneumonia, the X-ray had proved of the greatest value. In pneumonia where it had been impossible by the physical signs to localize the disease, the X-ray had shown with great delicacy the beginning of consolidation. Pneumothorax was another condition beautifully shown by the X-ray. The X-ray and the von Pirquet test had removed the diagnosis of miliary tuberculosis from a region of suspicion to one of certainty. Often unsuspected cavities had been found, usually near the apex and in very young children. The X-ray was of service in diagnosing pericardial effusion from cardiac enlargement, and also in showing the best place for puncture of the pericardium. It also enabled one to follow with greater accuracy the increase or diminution in the amount of pericardial fluid. The X-ray furthermore gave valuable information in regard to stenosis of the esophagus, especially where this was spasmodic or cicatrical, and it might be of value in pyloric stenosis, though here it was not at all essential and was sometimes misleading. For the diagnosis of early bone syphilis and for the differential diagnosis of syphilis from scurvy and of syphilitic bone disease from tuberculosis bone disease, particularly in cases of dactylitis or epiphysitis, the X-ray was of the greatest value.

AnApplication of the Roentgen Ray to Infant Feeding.—Dr. Charles Hendee Smith presented this communication. He pointed out that the teaching of doctors and nurses for many years had been that the child must be kept at the breast or bottle for twenty minutes, must then be held in a perfectly horizontal position,. and be put to sleep at once without change of position. Many mothers did not follow this plan, but allowed the child to take a shorter or longer time for nursing and then held him up against the shoulder after feeding, or prone across the knees or trotted him up and down in a sitting position, finally, after an interval putting him to sleep. One of these plans must be more desirable than the other. The posture of the child after feeding was of importance because of its relation to vomiting, colic, sleep, and general health. Radiography had shown the fallacy of the old idea that the stomach was vertical in infancy. The cardiac orifice was held firmly to the posterior abdominal wall. The fundus lay in the left paravertebral groove, on the diaphragm, spleen, tail of the pancreas, kidney and mesocolon, reaching a plane considerably posterior to the cardia; since the vertebrae projected forward some distance into the abdominal wall and liver anteriorly. Thy pyloric opening was directed backward to the duodenum, but lay in a somewhat more anterior plane than the cardia. There was therefore an obliquity of the long axis of the stomach from behind forward and to the right as well as from above downward and to the right. The cardiac opening was nearer the most posterior plane of the stomach than it was to the most anterior. The second factor in regard to posture was that there was a certain amount of gas in the stomach of every individual. Practically every radiograph taken in the erect position showed a bubble of gas in the fundus end of the stomach. In the prone position it was not possible to estimate the amount of gas present. The gas in the stomach might be derived from swallowed air, gastric fermentation, and intestinal gas. Swallowed air accounted for the gas in the stomach in the majority of cases. If the child was held in the horizontal position the liquid gravitated to the posterior part of the stomach, and that was the fundus, and forced the gas to the anterior part and to the right end of the body of the stomach and pyloric antrum. Hence it followed that the cardiac orifice situated well back against the vertebral column would be covered by the liquid and the gas could not escape into the esophagus. It could only escape through the pylorus if at all. If the amount of food plus gas was enough to distend the stomach, either food or gas must be forced out through the pylorus, or food must be regurgitated through the esophagus until the tension was relieved on the stomach wall. When the child was held upright the liquid gravitated at once to the most dependent part of the stomach, displacing the gas to the highest point, making it possible for it to escape through the esophagus. Dr. Smith exhibited X-ray plates illustrating these points and drew the following conclusions: (1) Regurgitation, colic, and indigestion depended not only on the food but on the manner in which it was given and the posture of the child between feedings. (2) The food must be of proper composition and proper amount. It should be given at as long intervals as possible, depending on the gastric capacity and the total amount of food required per day. (3) A feeding should not be taken too slowly, five to ten minutes being long enough and fifteen minutes being the maximum time. (4) The child should be held upright before feeding to get rid of any gas in the stomach. If air was swallowed in large quantities it was often necessary to interrupt the feeding one or more times, holding the child erect until the air had been expelled. Immediately after feeding the child should be held upright against the mother's shoulder and given the opportunity to eructate gas. (5) The child should be placed in bed preferably in the prone position with the head of the bed somewhat elevated. This routine might be followed with every child even though he did not regurgitate. Habitual tongue suckers had to be held up some times between feedings.

The Roentgen Ray and Pneumonia.—Dr Howard H. Mason made this presentation, a lantern slide exhibit showing what the X-ray revealed in pneumonia. A series of slides demonstrated the correlation between the beginning of the physical signs of pneumonia with the appearance of the shadow showing the beginning of consolidation. Other plates showed that with the disappearance of the physical signs of pneumonia the shadow of consolidation cleared up. The X-ray had shown that when a lung cleared it seemed to clear equally all over and not from within outward or from without inward. Quite a change in the shadow was frequently noted within twenty-four hours. In all the early cases before the lung consolidated there was just dullness, but when consolidation extended to the larger bronchi, one got all the signs of pneumonia, bronchial breathing, rales, etc. Still other slides showed the differences between the shadow of bronchial pneumonia and that of lobar pneumonia.

Dr. Ward Bryant Hoag asked why there was so much consolidation shown in lobar pneumonia, while in typical pneumonia with high temperature, rapid respiration, and bronchial breathing, the X-ray did not show such a marked shadow. In one case that came under his observation in which there were no physical signs on the sixth day Dr. Kerley was called in consultation and he could make out no local physical signs. On the seventh day they did not take the sounds, but on the eighth day the child began to show physical signs and the first attempt to take the sounds with the stethoscope revealed the lesion, and on that same night the child's temperature fell from 106° to 96° F.

Dr. S. I. Hirsch said that in regard to the difference between bronchial and lobar pneumonia he did not agree entirely with Dr. Mason. It was the general concensus of opinion that the pulmonary markings were due in lobar pneumonia to the blood vessels passing from the hilum to the periphery; the veins, arteries, and capillaries all took part, and the density was due to the congestion of the blood vessels. The bronchi in the X-ray picture seldom showed except at the hilum and then but slightly in contrast to the thick shadow at the base. In pneumonia there were small spots showing the infiltration in the air vesicles. In all bronchial pneumonia there was a tendency to confluence and these small spots tended to coalesce. In lobar pneumonia there was an even density during hepatization and this served to differentiate the two forms of pneumonia.

Dr. Northrup said it was most illuminating to see what had been unearthed by the X-ray. In the Presbyterian Hospital Dr. Mason had had a case of tuberculous meningitis in which the lungs showed no signs whatever of tuberculosis and yet the X-ray showed the lungs studded with miliary tubercles. The X-ray had certainly brought to them a new and valuable aid in dealing with children's diseases. In this case just referred to, at autopsy all the areas that the X-ray had indicated as affected were found to be involved.

Rœntgen Illustrations of Birth Fractures and Atresia of the Esophagus.—Dr. Edward D. Truesdell exhibited two roentgenograms showing atresia of the esophagus. The baby from whom the first picture was taken was a full-term child, who when he attempted to nurse suffered from peculiar attacks of choking and cyanosis. Careful examination did not throw any light on the case until an attempt was made to pass a catheter into the stomach. This could not be done and the X-ray showed the catheter in the blind pouch which ended at the bifurcation of the trachea and the cricoid cartilage. In the second case the condition was exactly similar. A number of slides were presented showing pressure deformities and fractures of the skull. They had never met with a fissure fracture, all that they had seen having been depressions similar to those of a ping-pong ball. Illustrations of microcephalus with irregularities of ossification were also shown. Dr. Truesdell said he had seen ten birth fractures of the clavicle, but that they showed no particular feature; several of them were bilateral and in all union took place. They usually put these up in a figure of eight or a Velpeau bandage. Of particular interest as showing what nature could do in the way of repairing fractures unassisted was a series of plates showing an angular deformity of the humerus resulting from a fracture without displacement. At the end of two weeks there was firm union, but a marked angular deformity. Successive plates showed the angulation becoming less and less, and at the age of two years the humerus was practically normal. The same thing had been shown to occur in other instances. Roentgenograms were also shown of fracture in cases of Erb's paralysis, fracture of the femur, and syphilitic periostitis.

Thymus Obstruction.—Dr. Frederick M. Law said that the first plate exhibited was taken fifteen minutes after death and the findings had been confirmed at autopsy. The child had been operated on for cleft palate, the operation lasting one-half hour. Six hours after the operation the child appeared to be all right. The nurse observed him at this time; then turned to care for a child in the adjoining bed. A few minutes later she looked at the patient and he was dead, having died without a struggle. The plate showed the enlarged thymus of the cap variety holding down over the heart. This was a case of status lymphaticus. A second plate showed an enlarged thymus of somewhat different shape.

Types of Infant Stomach.—Dr. Leon Theodore LeWald gave this lantern slide exhibit. He first showed an illustration of an intussusception in an infant. The exact location was not apparent from the physical examination as the tumor could not be made out, but by means of the X-ray the tumor was located so accurately that the incision could be made directly over it. At operation the intussusception was found to be exactly where the X-ray had indicated. A series of roentgenograms showed the variations in size, shape, emptying time, and the amount of gas in different stomachs of infants. The supreme test of stomach function in infants as in adults was the emptying time. Even peculiar shaped stomachs were able to empty themselves in a reasonable time. The X-ray was sometimes a positive help in making the differential diagnosis between pylorospasm and pyloric stenosis, and in deciding whether an operation was necessary or not. The roentgenogram from one case showed a small amount of food passing the pylorus; this case went without operation and got well. On the other hand, in another instance it was found that nothing had passed the pylorus in twenty-five minutes, and even at the end of an hour nothing had been passed, and it was decided that operation was necessary. Two illustrations of congenital syphilitic stomach were shown. Both children gave a marked Wasserman reaction. In one of these cases there was a cicatricial area in the lower half of the stomach and an enteroanastomosis was done. The child did well for about a week when she began to vomit and another X-ray examination gave the clue to the trouble. The esophagus was found to be very much dilated on account of the small cardiac pouch and by feeding small quantities of food the child finally recovered. Roentgenograms taken two years or more after operation for congenital pyloric stenosis showed the food passing through the gastroenterostomy opening. If one could decide on the proper case, one need not hesitate to operate since the results had been shown to be very satisfactory.

RETROSPECT OF CURRENT PEDIATRIC LITERATURE

Diseases of the Alimentary System.

Under the Charge of

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One Hundred and Forty-one Cases of Recurrent Vomiting in Private Practice.—Dr. Charles Gilmore Kerley, of New York presented this paper before the American Pediatric Society (Medical Record.) He stated that all cases seen in consultation and all those in which there was any question as to the correctness of the diagnosis had been excluded. There were 70 boys and 71 girls. The family histories of these patients showed that there was rheumatism in one or both parents in 40 instances, sick headaches and bilious attacks in 40. The cases of recurrent vomiting occurred in the vast majority of cases in the offspring of those who had not been occupied for two or more generations with manual labor. Of the series 69 gave a history of having been difficult feeders. Recurrent colds were also present in 417 per cent. In 12 there was a definite history of eczema, six had a habit tic, 14 either had now or had had enuresis, and 13 had had rheumatism. The presence of acetone in the later attacks was noted with but very few exceptions. The onset of the vomiting occurred in 37 cases during the first year, in 24 during the second year, and in 21 during the third, while in others it ranged from the third to the ninth year. In different individuals the duration of the interval between the attacks varied greatly, as did also the severity of the attacks. There was a rise in temperature in 90 per cent, ranging from 100° to 102° F. in the majority of the cases, though a few showed marked rises. In the vast majority of cases the recurrence could be controlled if the continued co-operation of the family could be secured. The association of recurrent vomiting with other forms of illness, such as eczema, spasmodic laryngitis, cyclic vomiting, and recurrent bronchitis and asthma was interesting. While two or more of these conditions were not ordinarily met with simultaneously in the same child, not a few suffered with a number of these conditions in alternation. In every instance the diet was a pronounced factor in influencing the susceptibility of the patient. Cow's milk, butter, and sugar were eliminated from the diet. One egg perhaps was allowed every third day. Saccharine was permitted as a sweetening agent. Three meals daily were allowed but nothing between meals. Red meat was given scantily three times a week. Poultry and fish were given at other times. In some cases skimmed milk was given, but never more than one pint a day. A grave error in our management of many children was the free use of cow's milk, butter and sugar. The average child would be better off if given not more than one pint of milk daily after the fifteen months. Sugar was not a necessity; unknown millions had lived without it. The further treatment consisted in the internal use of salicylate of sodium or bicarbonate of sodium, independent or in combination as advised by Dr. Rachford. This drug treatment was carried on with rest periods for months or years, as the case might require. Exercise, a hot bath at night, and physical therapeutics also formed part of the treatment. During the acute attack a weak solution of bicarbonate of sodium was best retained in the strength of five grains of bicarbonate to eight ounces of hot water. This was given freely. As a laxative the magnesium preparations were best retained. When the vomiting continued for from twenty-four to forty-eight hours the patient was given colonic flushings with bicarbonate of sodium, two drams to eight ounces at six or eight hour intervals. Nothing was gained by attempts at forced feeding. While not forgetting that anaphylaxis and reflex neuroses from various abnormalities were still to be considered as operative causes in such affections as asthma, recurrent vomiting, migraine, etc., he emphasized the fact that all were notoriously frequent in the children of gouty and lithemic ancestors.

Chronic Recurrent Diarrhea in Childhood.—Poynton, Armstrong and Navarro (British Journal of Children's Diseases) say that malabsorption is clearly a predominant feature in these illnesses, and we need not delay over the infantalism or extreme weaknesses of the lower extremities, or flatulent distention and general flabbiness and anemia, for we think this is a sufficient explanation. It is an interesting point that a considerable number of cases after reaching the age of five to seven seem in a mysterious way to outgrow the tendency to recurrent attacks, and to gain step by step a tolerance to a more generous diet; and one wonders in such cases to what extent the bowels remain permanently damaged, and whether the liver or pancreas or both acquire in some way greater vitality, and thus aid in overcoming the celiac element.

The problem of the diet seems to us a very difficult one, for a study of their cases and of others they have not recorded, seems to point to any of the chief articles of diet as being at one time or another harmful, although they think Herter inclines to the carbohydrates as the first offenders. Fat seems to stand first as the most difficult, yet some cases may take cream. Carbohydrates may be tolerated better than any foods at times when the condition is almost desperate, but often they are ill-borne, and if pressed appear to assist in causing distention in which the entire bowel is implicated. Broths and meat juices are, perhaps, as likely to be dealt with successfully as any food, but with milk the most diverse results occur. In some cases milk seems most injurious, in others it has been the great standby. The dried milks have often been of service. Eggs are frequently disastrous, and again fish has been most unsatisfactory, and minced meat equally so. The malted foods are very likely to produce diarrhea. The widespread intestinal lesions prepare us to find that all forms of food may be difficult to assimilate. With them, in fact, it has been that in some cases a diet has been arrived at by bitter experience with the particular individual, and has been evolved quite empirically. They add that diarrhea is by no means an invariable symptom, for there may also be constipation, which may prove equally dangerous from consequent meteorism. Of all drugs, the one that seems to the authors after a prolonged experience to be the most generally successful is bismuth. They have had the most convincing proof of this in the fact that several mothers of much intelligence and unsparing in care of their children have come back asking for this when a relapse was threatening.

They do not pretend that it will cope with the worst cases, but it is, they believe, of the greatest value in the milder ones, although it is powerless to combat an unsuitable diet. Opium and gray powder have, as is well recognized, their times of value; and when the stage of convalescence is well established mild iron preparations are useful. The routine use of cod-liver oil and malt in the stages of remission may, in their opinion, precipitate an attack.

The remarkable tendency to great abdominal distention and the diagnosis in some of these cases of dilated colon raise the interesting question as to whether a condition allied to Hirschsprung's disease, or, indeed, whether some cases actually described as of this nature, are not to be ascribed to this peculiarly severe and chronic affection damaging the neuro-muscular elements of the bowel. The course of events one would picture, then, is that the active disease has quieted down, leaving a much weakened gut, and constipation has resulted. This constipation has been neglected or permitted at first as a lesser evil, and thus added to the strain upon the weakened bowel, with the result that an extreme degree of atony of some of the most affected parts has resulted.

Infectious Diseases.

Under the Charge of

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Cause of Acute Anterior Poliomyelitis.—Lust and Rosenberg (Munch. Med. Woch., Charlotte Medical Journal) have studied this subject upon fowls and conclude that fowls are not sensitive to the virus of this affection as found in men or apes, whether exposure is natural or artificial. The occasional occurrence of a paralyzed chicken in the neighborhood of an epidemic of acute poliomyelitis is not sufficient to identify the disease in fowls with that in man, so that anatomical and histological studies must be made in the diseased fowl. The latter have revealed various abnormal conditions in the fowl's spinal cord, as might have been expected; but acute poliomyelitis as seen in many and apes is not included. Nevertheless, but a few chickens have thus far been examined in this respect. But even if the histological finds are ever found to be the same, the failure of the virus to take still will furnish an obstacle to identity. Fowl paralysis is not the only disease of fowls which attacks the nervous centers. In fact, if we take the domestic animals as a class, centers are involved in a number of severe affections—Borna's disease in horses, the dog plague and rabies canina, guinea-pig paralysis, and perhaps the fowl pestilence—are all evidently due to an ultrafilterable virus,. and all prevail in the form of epidemic diseases, just as does acute poliomyelitis in man.

Infection of Children with Bovine Tubercle Bacillus.—Mitchell (British Medical Journal, Charlotte Medical Journal) mentions seventy-two consecutive unselected cases of tuberculous cervical lymphnodes in children. Guinea pigs were inoculated with tuberculous material as soon as possible after receiving it, and the lesions subsequently developing were the immediate result.

It soon became evident that he had to deal with two distinct groups of tubercle bacilli, one of which far exceeded the other in virulence for the rabbit. The groups he has designated luxuriant and sparse. The sparse group is a very large one and contains sixty-five viruses. All the cultures of this group grow very sparsely or not at all on glycerin egg and are assuredly of the bovine type. The luxuriant group grows well on glycerin egg in primary cultures and succeeding generations and includes only seven out of the seventy-two viruses investigated. This division into luxuriant and sparse viruses has corresponded in all cases with the difference in virulence in rabbits.

By his study he is convinced that cow's milk containing bovine tubercle bacilli is clearly the cause of 90 per cent of the cases of tuberculous cervical lymphnodes in infants and children residing in Edinburg and district, and is responsible for by far the larger portion of tuberculous cervical lymphnodes in children during the milk drinking period in life. Bovine tuberculosis can, therefore, no longer be considered a negligible factor in respect to the spread of tuberculosis among children, especially since sterilized cow's milk in this country is a vehicle by which tubercle bacilli is most frequently introduced into the bodies of children. Until the proper legislative measures are obtained it is necessary for the public to sterilize cow's milk for the feeding of children.

Regarding the channels of infection, the faucial tonsils have in tuberculosis of the upper deep cervical lymphnodes an importance hitherto not well enough recognized or understood: that is, they act not only as most frequent portals of entry for the tubercle bacillus, but in a large proportion of the cases a well marked tuberculosis of the upper deep cervical lymphnodes is secondary to a small tuberculous focus in the tonsil (37 per cent). Mitchell so investigated the hypertrophied faucial tonsils removed from ninety children, in whim the cervical lymphnodes showed no clinical evidence of the tuberculous disease; six of these hypertrophied tonsils gave histologic evidence of tuberculous disease, while nine (10 per cent) yielded positive results when inoculated into guinea pigs. The bovine bacillus was present in three cases and the human in one case. The high percentage of faucial tonsils in which the bovine virus was present, Mitchell thinks, is further striking proof of the frequency of tuberculous cow's milk as a source of infection.

Cerebrospinal Meningitis.—P. H. Linthicum reports a case of cerebrospinal meningitis, in Lancet Clinic, October 24, 1914. The early history resembled that of enteritis; on the sixth day of the disease the blood count showed a leucocytosis of 17,000, the differential count being normal. During the afternoon of the sixth day the patient suddenly became worse and comatose and within the next twenty-four hours the picture of a meningitis was complete. Aspiration of the spinal canal was performed, ten c. c. of faintly turbid cerebrospinal fluid was withdrawn, and ten c. c. of antimeningitis serum introduced through the needle. During the injection the blood pressure fell twelve mm. This was repeated at the end of thirty hours. The child showed greater improvement after the second injection than after the first, and it was repeated for the third time after forty hours and again after another interval of forty hours. Following the fourth injection the child's condition improved steadily. The temperature rose two degrees within twenty-four hours after every injection and then fell. Examination of the cerebrospinal fluid showed that the meningococci decreased after every injection and disappeared entirely after the fourth. The polymorphonuclear neutrophiles decreased from seventy per cent to five per cent; the small mononuclear cells increased from twenty-five per cent to ninety per cent, and the total number of leucocytes decreased from 2,700 to 1,066.

Orthopedic Surgery

Under the Charge of

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Assisted by

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Infantile Paralysis or Anterior Polioencephalitis.—By J. D. Steinhardt (The Med. Council, Sept., 1914). The author calls to the attention of the family physician the necessity of intelligent and persevering treatment of this disease after the acute stage has passed. Wheth-

or the child recovers all or a large part of its normal powers, or whether it remains severely and permanently disabled is often dependent upon this careful after treatment.

For our knowledge of the etiology of anterior polioencephalitis, as the author prefers to call this disease, we are indebted largely to Flexner and his associates at the Rockefeller Institute. (Since the publication of Steinhardt's paper, Flexner has, I believe, announced that he has finally isolated the minute micro-organism that causes this disease. A. B. G.) Infection probably occurs through the respiratory tract, particularly through the nasal and pharyngeal mucous membranes. The disease occurs largely in the forms of epidemics, and attacks principally children under three years of age, although it occurs even among adults. Secondary causes of polioencephalitis lie in such conditions as lower the general bodily resistance and particularly the local resistance of the nasal mucous membranes. Epidemics have usually occurred during the summer months.

The incubation period in the human is not definitely known, but in monkeys it averages from a week to ten days. A child may be placed in bed well and be found paralyzed in the morning. But usually some of the following symptoms precede and accompany the onset of the paralysis: intestinal disorder, either constipation or diarrhea, catarrhal condition of the nose and respiratory tract, fever, severe headache, chill, sweating, vomiting, restlessness, delirium, or apathy, hyperesthesia of all or part of the body surface, pain in muscles and joints. There may be convulsions and extreme prostration. Cases may even terminate fatally before any paralysis is observed if the vital centers in the brain are involved early and severely. Classification of cases has been made by Wickman according, chiefly, to the centers of the cerebro-spinal system that are involved. The three symptoms, irritability, sweating and hyperesthesia are by some considered diagnostic before the paralysis appears, especially if the disease is prevalent at the time.

The prognosis is uncertain both in the acute stage and in the subsequent stages. It is difficult to say how far the recovery will extend; but the better and the more persistent the after treatment, the better the prognosis.

In the presence of this disease all precautions should be employed to prevent its spreading. It is a contagious communicable disease. All cases should be rigidly quarantined, nasal secretions and expectorations should be destroyed, the stools should be disinfected, all bedding, all toys, books, etc., handled by the patient should be disinfected. The nose and throat of the patient should be sprayed with an antiseptic and hexamethylenamin may be given internally. (The value of this internal remedy has not been proved.)

During the acute stage the various symptoms must be met as they arise. The affected limbs should be wrapped in cotton and maintained in normal positions with light splints to prevent the appearance of deformity and to prevent overstretching of weakened muscles. Pressure of bed clothes should be avoided.

As soon as the acute symptoms, and especially pain, have subsided, light massage and passive motion should be begun. Do not use the electric battery in the early stages of paralysis. Then follow carefull active exercises which require the utmost patience and perseverance on the part of the mother and the physician. Light braces should be worn as soon as the child gets out of bed in order to gain support and to prevent deformities and splints should be worn in bed for the same purpose.

If the physician doubts his ability to handle these cases or if he declines to give them the necessary time, he should refer them to the orthopedic surgeon.

Sacro-Iliac Displacement.—By Jas. K. Young (Interstate Med. Jour., Aug., 1914). The author discussed very completely the anatomy, the etiology, the pathology, the clinical varieties, the symptomatology, and the treatment of this disease.

The sacro-iliac joint is a true joint with a certain amount of normal motion possible between its surfaces, and its integrity is preserved by strong ligaments and by muscles. When these ligaments and muscles are injured by trauma or strain or are weakened by such general bodily diseases or conditions as produce a lack of tonicity, then relaxation and displacement of this joint may occur.

The two most important clinical varieties of sacro-iliac displacement are traumatic and static. The former may be occasioned by direct violence or muscular action. It may occur in the lifting of heavy weights or in a mere misstep or slipping of the foot. It is usually unilateral. There may result from such traumatism only a strain of the ligaments of the joint or an appreciable displacement of it. Chronic strain of the joint may result from lying long in bed during an illness, from shortening of a limb, or from deformity of the hip or the spine, from bad posture in standing and sitting, from certain pelvic conditions in women attendant upon menstruation and pregnancy and the presence of tumors. Static back ache or sacro-iliac strain is the term applied to this condition which results from a chronic mechanical strain of the joint. Some of its causes have just been enumerated.

Many cases of sacro-iliac strain or displacement have been diagnosed and treated as sciatica, lumbago, back-ache, neurasthemia; and numerous pelvic diseases of women.

Pain is a characteristic. It may be referred to the joint itself or to the lower limb, since the sacral plexus and the lumbo-sacral cord are in intimate relation with the joint. There may be limitation of motion, and flexion of the corresponding hips with the knee extended causes pain. In marked relaxation of the joint an abnormal mobility may readily be detected. Very frequently, also, the patient assumes an abnormal position and avoids certain movements to ease the pain.

The treatment consists in reduction, employment of apparatus to support the joint, and in after treatment to strengthen the ligaments and muscles of the joint. Of course, the causes of the disease should be determined and corrected.

The Intimate Relation of Orthopedic Surgery to Neurology.—By H. W. Wright (Cal. State Med. Jour., Sept., 1914). The author calls attention to many diseases that present conditions interesting both to the neurologist and the orthopedist, and that may fail of correct diagnosis or may lack effective treatment unless seen in consultation by both specialists or by one who has a broad knowledge of the other specialty as well as his own.

Hysterical joint symptoms and contractions may be made worse by orthopedic treatment which leaves unrecognized or ignored the neuropsychic element of the disease. Cases of syringo-myelia, disseminated selerosis, Friedrich's ataxia, chronic inflammatory diseases of the spinal cord, and progressive atrophy often appear in the orthopedic clinic. Spinal cord tumor may be mistaken for Pott's disease, sciatica, or spastic paralysis.

On the other hand certain orthopedic conditions may be mistaken for nervous diseases. Hip-joint disease or sacroiliac disease may be called sciatica.

The neurologist with some knowledge of orthopedics can prevent the not uncommon deformities that follow hemiplegia, paraplegia and peripheral neuritis. And many back-aches of so-called "neurasthenics" are due to static defects of various sorts which orthopedists now recognize.

Internal Derangements of the Knee.—By Robert Jones (Surg., Gyn., and Obstet., Oct., 1914). The author has explored the knee joint for mechanical derangement in more than 1,000 cases. Such derangement is a common condition and is probably not so generally recognized as it should be.

The most common derangement is injury to the internal semilunar cartilage. If this cartilage is displaced or fractured it usually causes a sudden locking of the joint, or inability to extend the knee, which occurs immediately after the injury. Sometimes, however, locking of the joint may not occur until long after the injury. If efficient reduction is immediately effected after the injury, and if the knee is maintained in extension and without strain upon the internal lateral ligament long enough to allow good union, i. e., four or five weeks, complete cure will be effected.

In chronic displacement of the cartilage the patient should walk with his toe turned in slightly and with the inner side of the heel of his shoe raised in order to throw his weight to the outer lateral ligament of the knee.

Displaced cartilage may be confused with certain other conditions, as synovial fringes, loose bodies, lipomata, and extraarticular osteomata.

Mr. Jones refuses to operate in any case where there has been but one displacement; he does not encourage operation where recurrent displacement is painless and is not followed by effusion. He strongly advises operation where recurrence is followed by acute symptoms, and he encourages it in recurrent cases where a strenuous athletic life is a means of livelihood or a physical necessity. It is a positive necessity in the case of men who stand or work in positions where a yielding knee would mean disaster. Age is not a contraindication to operation. The fact that osteo-arthritis and tuberculosis may result from a chronic displacement of the cartilage is an added reason for operation.

The author operated with the knee flexed at a right angle over the end of the table. He uses a nearly transverse incision from the edge of the patella ligament backward above the tibial border about an inch and a half. The loose cartilage may be found in any position within the joint. Only the loose portion of cartilage should be removed. Mr. Jones uses a tourniquet, never touches the wound with his fingers, never ties a vessel or drains the wound. Subsequent effusion into the joint is usually very slight if the operation has been done gently. The patient is allowed to walk at the end of ten to fourteen days, although the joint is protected for another week.

Loose bodies present in cases of osteo-arthritis should be removed whenever practicable.

Exostoses and osteomata of the condyles of the femur occasionally produce slipping or locking of the joint by interfering with the action of the muscles and tendons about the joint. Such growth should, of course, be removed.

Rupture of the crucial ligaments is readily diagnosed by recalling the function of these ligaments. An excellent recovery will usually follow immobilization of the joint for several weeks. Operation is unwise.

The author has seen many cases of fracture of the tibial spines, associated or unassociated with rupture of the crucial ligaments. The most common sign of this injury is an obstruction to full extension, and it feels like a bony block in distinction to the block found in dislocation of the cartilage. If this block is not present, the knee should be treated by rest and fixation; if it is present, by open operation the patella should be split longitudinally and the block removed.

Surgical Diseases of Childhood.

Under the Charge of

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Treatment of Harelip and Cleft Palate.—G. V. I. Brown (Jour. Amer. Med. Asso., March 2, 1907) says that the reasons advanced by the advocates of operation within three months after birth are that there is less nervous shock because the nervous system of the child is not well developed and the child is not capable of receiving the same impressions that it would later in life; that there is better reaction and less shock in young children because of less alarm and dread; that there is less deformity, for they claim all the tissues, bony as well as soft, develop naturally and according to accepted types; and that there is development such as will allow normal speech to follow when the child reaches speaking age. He says that any estimation of the mortality results of early operations is misleading, as many cases die of inattention even without the added strain of an operation. He calls attention to the fact that infantile mortality and susceptibility to infection are greatest during the first year, and that in all probability the resisting power is greater after that time. While it is more convenient to operate upon the cleft palate before closing the lip fissure, proper adjustment and fixation of the maxillary bones in their right relation and better circulation for the nutrition of flaps are secured by closure of the lip borders and anterior portions of the palate, and so this contributes to a successful result when the palate fissure is closed. Early closure may interfere with development of the teeth and so cause facial deformity by influencing the shape of the maxillary bones, nares, orbits and palate. Complete stenosis of one naris or partial of both may also result from closure of the palate fissure by immediate pressure. The writer favors placing a strip of zinc oxide plaster across the lip fissure immediately after birth and renewing this from day to day with increased tension as the parts are brought into closer opposition. This prevents increase of deformity by muscular action, brings the sides into symmetrical position, accustoms the child to tension upon the lip so that it is less likely to attempt to tear out sutures after operation, teaches it to take nourishment more naturally, and by closing the wide opening leads to proper breathing, which might be difficult after the operation if the child had previously had the larger air passage. The writer thinks that several slight operations with sufficient intervals are less dangerous than a single more radical procedure. The anesthetic should be given only in sufficient quantity to avoid actual pain. Scrubbing and alcohol only should be used to disinfect the mucosa before the operation and hydrogen peroxide used to clean the palate after it. All the operations should be completed before speech habits are fixed.

Pyloric Obstruction in Infants.—C. H. Miller notes in London Lancet that this condition is more common in males. The symptoms commonly begin in the second month, and consist of forcible vomiting, visible gastric peristalsis, wasting and constipation. At to the presence of a palpable pyloric tumor the author is rather sceptical. He has felt a hard cylindrical tumor in certain cases, especially during gastric peristalsis. But it is impossible to palpate deeply in many cases, and in some cases of wasting with a lax abdominal wall the author has felt a similar tumor. He regards the palpability of the pylorus rather as a sign of wasting than of pyloric hypertrophy. The medical treatment consists in (1) keeping the patient warm; (2)

washing out the stomach, and (3) feeding with predigested milk. Drugs are occasionally useful. When there are much colicky writhing and abdominal tenderness the author gives tincture of opium, 1-4 minim three times a day for two or three days. He has tried belladonna, but found it useless in this disease. The bowels must be kept open; an occasional dose of castor oil followed by gray powder will often be sufficient. Phenolphthalein is perhaps the most satisfactory drug to use regularly. In the very bad cases medical treatment only can be recommended. When such patients begin to improve and are strong enough to stand an operation a surgeon might give his opinion once more. If the condition remains stationary for long or begins to decline after an initial improvement a surgeon should be called in.

Infant Feeding in Health and Disease

Under the Charge of

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O. P. D. New York

Idiosyncrasy to Cow's Milk in Early Infancy.—P. Hertz (Ugeskrift for Laeger, May 21, 1914, p. 971). Since the first cases of idiosyncrasy to cow's milk in early infancy were recorded by Finkelstein and Schlossmann ten years ago, about 20 similar cases have been recorded; but with one exception, they have been observed in German hospitals. Edidently the condition is rare, when only typical cases are considered. It is not uncommon for disturbances to follow the transition from human to cow's milk in infancy, but the term idiosyncrasy, as applied to intolerance to cow's milk by infants, should be confined to those cases in which severe symptoms follow the ingestion of even minute quantities.

The subjects of this curious condition are almost invariably weakly children who, immediately or soon after birth, have been artificially fed, and, having done badly or developed gastro-intestinal symptoms, have been fed by a wet-nurse and have thereby regained weight and general vitality. After this diet of human milk has been given for a week to several months, an attempt to wean the child with small quantities of cow's milk is followed by a violent reaction. The first bottle containing some cow's milk is drunk unwillingly by the child, who vomits repeatedly during the meal. In half an hour to an hour it becomes restless, cold, pale and cyanosed. The respiration is raised, and the temperature ranges from 100.4° to 104°; in exceptional cases it is subnormal. The motions, which have been normal, become fluid, slimy and lumpy; and the urine sometimes contains albumin. The child rapidly loses weight, and presents the symptoms of severe alimentary intoxication. In many cases it recovers with extraordinary rapidity, and in a few hours the temperature is normal again. But though a diet of human milk is again resorted to, the first meals are taken with poor appetite, and are followed by vomiting and irregular action of the bowels for the next few days. In other cases the temperature may remain high for several days. The child's appearance is unsatisfactory, the appetite is poor, and it takes 8 to 10 days' exclusive diet on human milk to regain its former state. At first the same reaction follows every succeeding attempt to change the diet from human to cow's milk; but the reaction becomes gradually slighter till, by a cautious dosage, it is ultimately possible to feed the child on cow's milk without ill effects.

The Caloric Value of Diets of Sick Infants.—Dr. J. C. Gittings read this paper before the American Pediatric Society (Medical Record), in which he compared the caloric value of the diets in 125 cases with two standards: (1) The caloric needs based upon the admission weight. (2) The caloric needs of an infant of the same age but of normal weight. The caloric needs were calculated on the basis of the following allowances: 50 calories per pound of body weight during the first three months, 45 calories per pound of body weight during the second three months, 40 calories per pound of body weight during the remainder of infancy (up to two years). The cases were divided into the following classes: Atrophy cases, acute gastrointestinal cases, and miscellaneous cases, including pneumonia, bronchitis, typhoid fever, etc. The results corroborated the general impression that cases of acute gastrointestinal disease with fever, vomiting, or diarrhea received a diet more or less markedly deficient in caloric value, and that gain in weight, on the average, went hand in hand with the administration of adequate nutriment. The value of a conclusion based upon general averages could not always be applied to the individual case, and the danger of allowing theoretical consideration to outweigh careful clinical deductions must be emphasized. The estimation of caloric values of diet must not be considered as a compulsory dietetic indication, and due regard must be paid to the effects of diet upon digestion. On the other hand, it was undoubtedly true that marked caloric deficiency or excess, if persisted in, was reasonably sure to be followed by nutritive or digestive disturbances. The caloric value of the diet furnished at once the measure by which we could estimate the risk of starvation and weigh it in the balance against the risk of increasing indigestion.

The Feeding of Mal-Nourished Infants with High Proteins and Carbohydrates and Very Low Fat Values.—Dr. D. J. Milton Miller of Atlantic City made this report, before the American Pediatric Society (Medical Journal), which he said was the result of slow convictions and clinical experience and dealt with no theories of malnutrition. The most successful method of nourishing these children was by human breast milk and too much time was wasted in seeking substitutes before wet nursing was resorted to. Buttermilk, Eiweisse milch, and Keller's malt food were applicable for a short period only. The low fat and high proteid and carbohydrate content was characteristic of all these preparations. Many infants having an intolerance for cow's milk became accustomed to it by beginning with very minute quantities and gradually increasing the amount. No infant should be kept long on a fat free diet and when the fat was reduced to minute proportions the carbohydrates should be increased. In their cases the percentage of proteids was never excessive. He had never been impressed by the injurious effects of sugar for if acidosis was produced it was not serious and might easily be corrected. Skimmed milk formed the basis of the formulae used with one to one and three-quarters per cent fat. Floured dextrine or dextro-maltose was added. The children were not long kept on a fat free diet, though the percentage of fat might always be below that of the normal formula. Eleven children were fed on this principle with very favorable results.

The Good Results of Low Fats and High Proteids in Cases of Artificial Feeding in Infants.—Dr. Percival J. Eaton and Edward B. Woods of Pittsburg, Pa., presented this communication before the American Pediatric Society (Medical Record), which was based on a small series of cases admitted to the Children's Hospital in Pittsburg and were typical of the feeding cases in infants whose heredity was not of the best and whose home environment was bad. Certified milk and gravity cream alone were used. The formulae were all low in fats; the percentages did not exceed 2.5, and started generally considerably below this figure. The author emphasized the points made in a previous paper on the same subject, the most important being that babies were fed accordingly to this general plan, even in hospital work, were less inclined to be ill and had a more stable life as well as a very consistent growth. The formulae should be adapted in quantity and quality as closely as possible to the individual infant, that is, the balance between the fat and proteid should be maintained for the given infant. These formulae and practically all that they used nowadays were home modified mixtures, which Bowditch and Bosworth had shown to be more nearly correct than were laboratory mixtures, at least as a rule. Dr. Eaton called attention to a printed form which was filled out each time a new formula was prescribed. It was so simple and complete that any mother or nurse could carry out its directions.

Sodium Citrate as a Preventive of Milk Coagulation. A. W. Bosworth and Lucius L. Van Slyke, (Amer. Jour. of Dis. of Children, April, 1914), explain that in place of calcium casenate of normal milk, there is a more soluble, double salt of calcium and sodium. In the presence of rennin, a paracasenare is formed which is insoluble for the normal milk, soluble if sodium citrate has been added. 4 milligrams of sodium citrate per 100 c.c. of milk is sufficient to prevent dense curds. (Note: In digestion experiments the gastric filtrate sometimes fails to coagulate milk even when peptonization of egg albumin occurs. This has been taken as an indication of a specific failure of rennin. There is, however, a minority opinion that pepsin and rennin are identical. At any rate, specific failure of one test without failure of the other is quite rare and reliance should not be placed on a negative result of the milk coagulation test until it has been controlled with milk known to be coagulable with normal gastric filtrate. Sodium bicarbonate is sometimes added to milk to check fermentation and it is quite possible that diet or impregnation of water with sodium salts may produce a milk containing the double casenate of calcium and sodium.

BOOK REVIEWS

Medical Jurisprudence, A Statement of the Law of Forensic Medicine, by Elmer D. Brothers, B.S., LL. B., Member of the Chicago Bar; Lecturer on Jurisprudence in the Medical and Dental Departments of the University of Illinois, and in John Marshal Law School. Price $3.00.

No physician is thoroughly equipped, either for the practice of his own profession or for the self-protection, unless he adds to his medical qualifications a knowledge of the field in which medicine and the law overlap. Similarly practitioners of law should understand the bearings of medicine and toxicology upon their work. The present work by Brothers is the very latest work on medical decisions affecting physicians. It embodies a brief explanation of this phase of the subject which the author found most interesting and instructive. The author had made no effort to exhaust the subject, but rather to abridge and condense wherever possible without sacrifice to completeness of exposition and accuracy in elucidation of fundamental principles. The author has made liberal reference to the authorities sustaining or justifying the propositions set forth and quotes from decisions wherever it appears expedient and appropriate, using the language of the courts in announcing and illustrating principles. He is liberal in his references on important subjects, citing annotations where the student will find fuller illustrations of the application of the law to facts. The book is well written, terse and to the point..

The Tonsils, Faucial, Lingual, and Pharyngeal; with some account of the Posterior and Lateral Pharyngeal Nodules, by Harry A. Barnes, M.D., Instructor in Laryngology, Harvard Medical School; Surgeon in the Department for Diseases of the Nose and Throat, Boston Dispensary; Assistant Laryngologist, Massachusetts General Hospital; Member New England Laryngological and Otological Society; Member American Laryngological, Rhinological and Otological Society. Price $3.00 net. Illustrated. C. V. Mosby Co., St. Louis, 1914.

Dr Barnes has produced a most attractive book on the tonsil. In this work he is a pioneer since it is the only book on the tonsil in any language that goes into the subject in a detailed and careful manner. The author calls special attention to the tonsil as an avenue of general systemic infection, a subject which, at the present time, is being given a great deal of attention by medical investigators. The author lays no claim to having settled any of the mooted questions on this subject, but he has undertaken to put into concise form the facts concerning the lymphoid tissues of the throat and to make these facts the bases of any theories advanced. Dr. Barnes has written the more strictly scientific parts with a view of emphasizing their practical application to clinical work. The illustrations are all original and add much to the value of the work. The book contains a mass of valuable information for the general practitioner and should be on the library shelf of every specialist in diseases of the nose and throat.

Women and Morality, by a Mother; Men and Morals, by a Father; The Sexes Again, by C. Gasquoine Hartley (Mrs. Walter M. Gallichan). Introduction by Wallace Rice. Price, cloth binding, $1.00 net, by mail $1.06. Laurentian Publishers, Steinway Hall, Chicago, 1914.

The Laurentian publishers deserve the thanks of the public for rendering accessible, in book form these thought-provoking essays on such relations, discussing with candor and disparity between our pretensions and our practices in the realm of sex morality. The writers are radical in their views and do not hesitate or mince words in expressing them. Their observations and deductions, while startling, are not easily overthrown. The essays as a whole, are remarkable for their clean, fine devotion to truth, for their utter contempt of Puritanical prudery, modern social conventions and ecclesiastical pronouncements; for their frankness without offensiveness. This work does not consider white slavery, nor damaged goods, but is an intelligent, interesting and advanced discussion of present-day sex relations.

The Infant Nutrition and Management. By Eric Pritchard. M.A., M.D. (Oxon), M.R.C.P. (Lond.) Physician to the Queen's Hospital for Children, physician to out-patients, City of London Hospital for Diseases of the Chest, Victoria Park. Price $1.00 net. Longmans, Green, and Co., Fourth Avenue and 30th Street, New York. London: Edward Arnold.

This little volume is founded on a series of lectures which Dr. Pritchard has delivered at various times to his students at Queen's Colege for Children, the Medical Graduates' College and Polyclinic and the National Association for the Prevention of Infants' Mortality. Some of these lectures have been published in whole or in part in the Lancet, the Practitioner, the American Practitioner, the American Medicine, Pediatrics and the British Journal of Children's Diseases. The work is not intended to take the place of the more ambitious of text books on the subject of Infants' management, it contains the views which in many cases are still regarded as unorthodox and revolutionary. The section of breast feeding is of more than usual interest. The section on the nutrition of infants is most scientifically presented. The author lays great stress on the question of foreign proteins which is of immense importance in infant dietetics. It is a little book that every physician who is called upon to treat diseases of infancy should be familiar with. The reputation of Dr. Pritchard as a teacher in this special field has spread far beyond the bounds of his native country and it gives us pleasure to commend this little volume.

Bulkley.—The Feeding of School Children. By M. E. Bulkley. With an Introductory Note by R. H. Tawney, Director of the Ratan Tata Foundation, Pp. 278. London: G. Bell & Sons, Ltd. 1914. The MacMillan Co., New York City. Price $1.25.

The problem of the feeding of school children is one of paramount importance, for, as Sir George Newman has very aptly remarked, defective nutrition stands in the forefront as the most important of all physical defects from which school children suffer. In this volume there is much matter of practical importance on this subject, and it has been written by one who is well versed in the problem under discussion. The author not only gives an historical sketch of the movement down to the passage of the Act of Parliament for the provision of meals, but also affords a critical digest of the work carried Scotland and abroad. The volume, which is one of the Ratan Tata Foundation publications, is thoroughly practical, and should appeal to all interested in the study of child life and the future welfare of the race.

The Physicians' Visiting List for 1914. Sixty-fourth year of its publication. Price, $1.25. P. Blakiston's Son & Co. (Successors to Lindsay & Blakiston.) 1012 Walnut Street, Philadelphia, Pa.

For sixty-four years the enterprising publishing house of P. Blakiston's Son & Co. have issued a physicians' visiting list. None has been more complete than that for 1914 which contains treatment for poisons, the metric system simplified, dose-tables, periods of infectious diseases, asphyxia of aponea, thermometric scale, etc. This handy pocket visiting list is bound in Russian leather and printed on good paper in clear type. We recommend this old standby to all physicians.

PEDIATRICS

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EDITORIAL

THE CLOSE OF ANOTHER VOLUME

With the present issue, the last for 1914, Pediatrics completes its twenty-second volume and in doing so the management takes this occasion to extend its thanks to the generous support of its many friends, and looks back with no little degree of satisfaction upon the year that has passed. While all its various departments have received the most careful attention, never before in its long career has it been enabled to publish such a large number of original articles, contributions to medical science of a character of which any journal might well be proud.

For the future, there is the same, and even a more brilliant promise of greater success and no effort will be spared to make Pediatrics, always, and in all respects, a practical, helpful, journal to every doctor who attempts to prescribe for and alleviate the ills of infants and children. During the past year a great deal of time, energy, money and grey matter have been expended on Pediatrics, striving to make it worthy of the attention of the leading metropolitan Pediatrician and the general practitioner, whether his field lies in the city or the rural districts and from the encouragement received we have reason to believe that we have not labored in vain.

We hope our readers are satisfied with what has been placed before them from month to month and that they will continue to assist in the scientific uplift of Pediatrics. We also hope that each of our subscribers will speak a good word for Pediatrics among their medical friends. Pediatrics wishes to stand wholly upon its merits and there can be little question that there are many physicians who would like to subscribe if their attention was once directed to its real value. Such effort would be equally advantageous to all concerned for it is a self-evident fact that the larger the circle upon which such a publication can depend for pecuniary support, as well as for scientific contributions, the more attractive in every way it can be made. In the volume closing with this issue, we have published nearly 900 pages of text matter, being much more than any preceding volume of Pediatrics has contained. The Editor desires to extend his thanks alike to our subscription and advertising patrons and to wish them all the season's compliments.

THE ANEMAS OF INFANCY

Until the intelligent interest of the general profession is aroused upon this topic, scientific advance in our knowledge will be much crippled. The present literature shows little more than a good beginning in the right direction. We have first of all to unify the terminology; this shows at present needless variation even in words applied to comparatively well-defined morphologic constituents of the blood. The next thing, and the most important thing, is a more rigid and thorough clinical study of the cases. Under the title of "V. Jaksch's Disease," for example, or "Anemia Infantum Pseudoleukaemica," no less than four or five distinct disorders of the blood in childhood have been recently described by various authors. And the data of the reports are often so loosely set down that a competent haematologist is unable to do more than guess at what the disease actually was. To a more exact clinical study of the blood there are requisite only a few conditions, but these must be perfectly fulfilled. We think it safe to say that several months should be given to practice in counting red and white cells before a physician should trust his numerations. Even the making of films requires repeated efforts; and without accurate attention to each detail of preparation of the covers the stain will not be satisfactory or intelligible. The methods of estimating hemoglobin by V. Fleischl's and Gowers' instruments are so dependent on the "personal equation" of the observer that it would be a safe rule for all except the most inexperienced to use the "specific gravity method" instead. If the writer's time is short, it should be given exclusively to making an "Ehrlich stain." This gives far the most extensive and important information on diagnostic points. It shows readily the character of the red cells, nucleated reds when presented, the relative number of whites and reds, the character and relative proportion of the various types of whites. A differential count of the whites—an indispensable factor in diagnosis—can also be most easily made with the same stain. One other point (upon which R. C. Cabot has wisely laid stress) is a careful statement, not merely of the age of the child in years and months, but of his actual development. This includes number and character of the teeth, condition of the fontanelles and epiphyses, the mental and muscular advancement, and, perhaps, also the diet and hygienic conditions. Where the observer has not time nor instruments at his command, he need only mail some properly prepared films to one of the laboratories where such work is now constantly being done. We are already finding that a blood examination in difficult cases is just as essential to a correct diagnosis as the percussion of the lungs or testing of the urine, and in specific diseases of the blood, whether primary or secondary no observer should be satisfied with anything less than a complete description of the haemic condition.

TREATMENT OF CONSTIPATION IN INFANTS

In breast-fed children we must seek to discover what is the fault with the mother's milk. It will generally be found that the proteid percentage is higher, while the fat percentage is lower than normal. Much may be done to remedy this by reducing the consumption of proteids on the part of the mother or wet nurse and increasing her daily exercise. If this does not correct the difficulty, a small amount of cream may be administered once or twice daily, or artificial feeding with a properly modified milk instituted.

In constipated bottle-fed infants the fat should be increased to at least 4 per cent., regular habits taught, and a small quantity of orange juice or stewed prunes administered daily. The suppository of soap or gluten, or waxed paper inserted into the rectum at the same hour every day is very effective in promoting regularity of the bowels. Massage, both general and local is often of the greatest service. Drugs should be avoided as much as possible. Cod liver oil and the sweet preparations of malt are often of value.

When constipation is due to reduplication of the colon, McClannahan lays great stress on the importance of straightening it with the finger or by means of daily irrigations. A lisle-thread catheter is passed through a cork. The catheter is passed into the bowel a short distance while the cork is pressed against the anus; a syringe is attached to the catheter, and after the water begins to flow, the catheter is gently passed on into the bowel. The water unfolds the bowel, while at the same time it improves the tone of the muscular wall and stimulates peristalsis.

CHRISTMAS SEASON is here. The Editor of Pediatrics takes this opportunity of extending greetings and hearty wishes for a HAPPY CHRISTMAS and a PROSPEROUS NEW YEAR---to EVERY reader.

PEDIATRICS

ORIGINAL ARTICLES

SPASMOPHILIA*

BY C. G. LEO-WOLF, M.D.
Buffalo, N. Y.

With the advent of the exact methods of physiology, pathology and animal experimentation, during the second half of the nineteenth century it was thought that an explanation of all morbid conditions by the use of these methods could be offered. The French school of medicine, however, still adhered to the old theory of the diatheses of disease. But those of us who think realize that we cannot ignore the fact that physiological, anatomical and etiological considerations do not represent the sum total of morbid activities, and we are therefore, per force, returning to these old notions, though not in the old phantastic and speculative way, but on a thoroughly scientific basis.

It would lead us too far today to go into the nature and the classifications of these various diatheses, and we will reserve this for some other time and place, and today we shall only attempt to discuss before you one of these diatheses, namely "Spasmophilia."

Some of you might ask me, "What is this condition?" Is it a new disease, or an old one under a new name? Is it of sufficient frequency to interest any one but the specialist? To these we will answer that it is a comparatively new name for a complex of symptoms which are now properly classified as one distinct entity, not only so that we can easier recognize these but to show their causative connection; and as to its frequency of occurrence, we must state here that in the lower social strata more than one half of all infants have, at the least latent, spasmophilia, as proven by careful, painstaking and systematic examination.

As to the name spasmophilia, for this functional disorder of the nervous system, we think it was the late Professor Soltmann of Leipsic who first described the physiological spasmophilia or increased disposition to reflex irritation in early infancy, while Thiemsch in 1899 mentioned individual pathological spasmophilia, which was formerly called the tetanoid condition; Heubner speaks of spasmophilic conditions; Finkelstein of spasmophilic diathesis.

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*Read at the meeting of the Eighth District Branch of the Medical Society of the State of New York at Niagara Falls, Sept. 2, 1914.

According to Thiemisch ''Spasmophile diathesis of infants is a constitutional anomaly recognizable by a measurable, mechanical and electrical over excitability of the nervous system which forms a pathological predisposition for a certain form of partial as well as universal clonic and tonic convulsions.'' Though it may be found in a neuropathic disposition it is not necessarily a part of this, just as we find it frequently in rickety patients, without our having been able to trace both disorders to the same cause. Escherich has seen in it the expression of an hyperexcitability of the peripheric neuron.

Spasmophilia is an abnormality of constitution, peculiar to infants and young children; in very young infants it is physiological; as a pathological condition we usually observe it first about the middle of the second quarter of the first year of life, it seems closely related to idiopathic tetany.

Its etiology is still shrouded in darkness and as is always the case under these circumstances, different hypotheses have been brought forward, in each one of which we can find much that is of more or less interest and that seems to come close to the actual facts, yet nothing definite has been settled upon which would explain the whole complex disorder.

Of these hypotheses three stand out distinctly, each one of these seems to carry us quite near the truth, and yet none of them gives a full and clear explanation of the condition in question.

First there is one which places the blame upon the quantity and quality of the food which may make spasmophilia appear or disappear, according to its regulation. Next is one which accuses the calcium metabolism, it takes its origin from the recognized fact that if we deprive the cerebral cortex of calcium we increase its irritability. Czerny and his pupils have been able to prove that the brain of children afflicted with tetany is deficient in calcium.

Last come those who claim that hypoparathyroidism is the etiological factor, an insufficiency of the internal secretion of the epithelial bodies, experimental removal of which causes tetany. Some investigators have also found hemorrhage into these parathyroid glands in children who died from spasmophilic conditions.

Which one of these hypotheses is right? Which are wrong? Are they all wrong, or might not all be right, and one be the complement of the other? We are personally inclined to the latter explanation. Why could it not be possible or even probable that an irrational quantity or quality, or both, of certain elements in the infants' food, should produce some poisonous substance which interferes with the normal internal secretion of the parathyroids which in turn perverts the calcium metabolism of the infant? This appears to me to be, partially, at least, borne out by the experiments of Finkelstein and his pupils who found the blood and the nervous system deficient in calcium in cases in which they had produced artificially tetania parathyreopriva in animals.

This explanation would make all symptoms depend upon the kind of nutrition and it would make us regard it as a certain form of interference with the intermediary metabolism. It would be borne out by the well known fact that spasmophilia attacks almost invariably artificially fed children and that human milk is the best curative agent, whilst a return to the former diet will lead in many cases to an almost instantaneous return of the condition.

We would then still have to investigate whether the condition is due to the breaking up of a substance which arises in normal digestion and which the normal child is able to make innocuous, or if it is something akin to the vitamins, as Funk has called these essential components of the dietary the chemical nature of which is not yet determined.

This would furthermore furnish us with an explanation of those cases in which primary pathological changes in the parathyroids or operative interference with their functional activities produce the tetanic symptoms.

Of the other etiological factors we have to remember heredity inasmuch as we find a frequent family disposition to the different forms of spasmophilic symptoms and also, which is still more important, we may observe the Chvostek sign in the mothers of our little patients.

The seasons of the year are of great importance as we see most of our cases during the spring months, March, April, and May, after a prolonged indoor period of bad air incident to the winter months.

Spasmophilia is rare before the fifth month and also after the second year of life, it is most frequently observed at from six to fourteen months.

Infectious diseases have an unfavorable influence upon spasmophilia as have also digestive disturbances.

In the majority of cases we find it simultaneously with rachitis, this being easily explained by the interference with the calcium metabolism.

Let us now consider as briefly as possible the symptomatology of spasmophilia:

First to be observed is laryngospasm, (laryngismus stridulus, spasm of the glottis, or internal convulsions), this is, according to Kassowitz, an expiratory apnea and consists in a spasm of the closing muscles of the glottis which may extend to the diaphragm and muscles of inspiration, this tonic contraction of the respiratory muscles may assume all degrees of severity, depending upon the apnea, from the lightest in which we observe only a sounding inspiration, which does not seem to trouble the child much, if at all, to the severest forms in which the little patient bears such a frightened expression as if pleading for help from some unknown horror, its skin turns pale and later cyanotic from the stoppage of respiration, frequently loss of consciousness from lack of oxygen, and later general convulsions from carbon dioxide poisoning. This condition may last only a few seconds or as long as one or two minutes, while in not a few cases, sudden death occurs in apparently healthy children In those severe cases which recover from their attack the apnea disappears before the spasm of the glottis. This is indicated by the stenotic respiration which is at first slight and stertorous, rattling, then loud stridulous or crowing; this also indicates the end of the danger. Some children may have only an occasional paroxysm or a few a day, in others they may follow closely upon each other; they may come when awake or during sleep; sometimes closely following some excitement, such as our appearance near the patient or our examination, sometimes without any apparent cause in the midst of apparent good health following a crying spell or even without this, or it may accompany a slight rise in temperature from some cause or other. The severity of the attack may vary in the same child.

Not many other conditions are equally exciting, both for the physician and the family, especially when it lasts for weeks, and when every attack seems to be the final one and when death may set in during any one of them.

Next we will consider the latent tetany and according to Loos no case of laryngospasm can be observed which does not also show signs of this condition if we will only take the pains to look for them.

First because most important and at the same time the surest symptom of latent tetany is the galvanic overexcitability of the nerves, Erb's phenomenon, as shown by passing a weak but measureable and measured galvanic current through one of the nerves of an upper extremity, placing the indifferent electrode of 50 centimetres square upon the abdomen, and Stintzing's normal electrode of 3 centimetres square upon the nerve. Erb found that normally a weak galvanic current of between one and three milliamperes produces in children only a kathode-closing-contraction (Ka.C.C.). A medium current of from two to five M.A. produces a Ka. C.C. and also an anode-closingcontraction (An.C.C.), though this latter will be less pronounced. If we strengthen the current just a little more then we will have an anode-opening-contraction (An. O.C.). If we still further increase the current up to eight M.A. or more we will get the following reactions: A Ka.C. Tetany, An.C.C. less pronounced, An.O.C. and finally a very weak Kathode-opening-contraction (Ka.O.C.). As it is expressed in the so-called law of Pfluger: Ka.C.C., An.C.C., An. O.C., Ka.O.C.

Erb formulated the diagnostic reaction as Ka.C.C. at 0.5 to 1.0 M.A., 0.63 according to the investigations of Thiemisch; but the one now most frequently in use, as it is the easiest to demonstrate, is the reaction of Mann & Thiemisch: a Ka.O.C. at 5 M.A. or less.

In following up a single case by means of the galvanic current we will be astonished by the continuous oscillations, upwards as well as downwards, of the strength of the current required to elicit the Ka.O.C., at times without any corresponding symptoms; we may observe steady values for weeks or months and then suddenly a rise; we may observe intermissions and also remissions of varying duration.

The second sign of latent tetany is the mechanical overexcitability of the nerves. Slight percussion of the nerves or muscles will not produce any reaction except in the newborn, whilst in this condition the children react more or less promptly to slight percussion, a mere tapping either with the finger or a light hammer. over the so-called excito-motor points; the most easily elicited is the facial nerve phenomenon, the so-called sign of Chvostek, though this can only be regarded of value when the infant is neither crying nor laughing; but we may also produce it in the peroneal nerve at the head of the fibula or in the radial nerve in the upper arm. Some investigators, like the late von Escherich, called attention to this sign and placed it even before Erb's in importance and claim that in some light cases of spasmophilia the sign of Chvostek may be the only evidence of this condition, that it will then be found to prevail during the same months in which tetany is most frequent. We must not forget however that Chvostek's sign is of especial diagnostic value in infants, but not to be relied on in older children.

The third symptom in latent cases which is also of great importance when present though it is found wanting at times, is Trousseau's sign; artificial tetany of the hand by compression of the nerves and blood vessels in the sulcus bicipitalis produced by applying, for from two to three minutes, an Esmarch constriction bandage.

It is only one step from the condition of latent tetany or the tetanoid stage to true tetany, which is characterized by tonic contractions in the muscles.

These contractions may at times be confined to one muscle or group of muscles only, or to one or all extremities.

Trousseau & Henoch have described cases of spasmodic torticollis due to contraction of the sterno-cleido-mastoid muscle and others have described similar contractions in other muscles.

In the cases of tonic contractions of the extremities we observe the carpopedal spasms; the hands in the so-called accoucheur's position, the elbows flexed and pressed into the sides, the legs flexed on the thighs, the feet in the pes equinovarus and pes excavatus position. These spasms may also spread to the head and trunk and may produce mimic cramps of the face, opisthotonus or emprosthotonos, cramp in the tongue, cramp of the sphincter vesicae and consequent retention of the urine.

These conditions are intermittent, they start suddenly and in repeated attacks which may last for minutes, hours, or days. All attempts to reduce the spasms manually produce resistance on account of the pain.

The non-striated muscles may also be affected, this is especially observed in the eye, where the tonic contractions of fibres of the iris may produce pupillary inequality; also hippus or spasmodic alterations in the size of the pupil; according to Thiemisch also pupillary immobility; we have observed one case in which the color of the dilated iris was much lighter than in the unaffected eye.

We may also see oesophagism; asthmatic attacks due to contractions in the intercostal muscles; furthermore, though rarely, trismus, strabismus, nystagmus and deviation conjugee (the deflection of the eyes in the same direction at the same time).

Vasomotor disturbances such as erythemata, urticaria, hyperhidrosis and a peculiar swelling on the back of the hands and the feet are by no means rare.

The last conditions to be considered by us are the eclamptic seizures, the convulsions of infants, clonic contractions of the muscles in young children, with or without loss of consciousness which I think I can refrain from describing as they are familiar to you all. I have to mention, however, that it is impossible to draw a clear line of distinction between these last named conditions and manifest tetany, as clonic convulsions are by no means rare in tetany.

In making a diagnosis of spasmophilia we must remember all the symptoms I have just enumerated and we must use the different methods mentioned to find the causes early, when they are still in the latent stage, to have the best results.

These children will quite frequently look pasty, some are obese while others may be thin and emaciated; florid rickets is a frequent accompanying condition. Some patients may show a satisfactory or even an excessive gain in weight and may never present any symptoms from the gastro-intestinal tract, others may be weakly and suffer from the most persistent digestive troubles. In some breast-fed babies the addition of even small amounts of cow's milk may make the latent inherited spasmophilia manifest.

The differential diagnosis in infants may at times be extremely difficult when it comes to the point where we have to eliminate the possibility of its being an infantile spastic spinal paralysis or Little's disease, or a functional hypertrophy of the muscles, we must also think of cerebral sclerosis, cerebellar tumors and hydrocephalus. Some cases may closely simulate meningitis; in older children tetanus and hysteria must be thought of.

In all our examinations we must be extremely careful, deliberate and quiet, because the excitement produced by our well-intentioned efforts at making a correct diagnosis might produce a lethal attack.

The frequency of spasmophilia is by far greater than has been generally assumed. Geographic differences in its occurrence and its severity have also been put forward. In some localities cases of laryngospasm and manifest tetany are so frequent at certain times of the year as to assume almost an epidemic nature, in others they are reported to be rare at all times; the reports from different cities and countries vary greatly. Is this due to errors of observation or is it actual? Custom, habits and the different modes of feeding infants have surely considerable influence on the incidents of these conditions. The difference of nervous excitability in different races may also account for this seeming discrepancy.

The prognosis in cases of spasmophilia should always be made most guardedly for reasons which I hope I have brought out sufficiently in the foregoing; never forget that while you might pronounce the trouble to be of a trivial nature, which by the way, it can never be, an attack of laryngospasm may be snuffing out your patient's life with you standing by in helpless despair.

We may not go as far as Thiemisch and other authors who claim that of the children who have eclampsia two-thirds will later in life be neuropathics or will have defective intelligence, but we must always mention the possibility of such an occurrence when asked about the prognosis.

We have now reached the last part of our paper, namely, that dealing with the therapy of spasmophilia.

Here we must first of all consider the prophylaxis. Inasmuch as we know that the cases appear before us most frequently at the end of the winter, we must insist on plenty of fresh air and as much sunshine as possible at this as well as at all other seasons of the year. Knowing that this condition is found almost exclusively in artificially fed children we must use all our efforts to give breast-milk to most of our little patients and to give it whenever possible for the allotted time of nine months. When it comes to weaning the little ones give fruit and vegetables early and cereal decoctions to dilute the cow's milk.

As it seems more than probable that something in the cow's milk is responsible for these conditions, something in the whey most likely, according to the school of Finkelstein, the first measure in our theory will be to place infants on a tea diet for a few days or cereals in older children and to keep the amount of cow's milk down to a minimum, provided we cannot offer our little patient nature's food, namely breast milk. Now this may sound very easy to you and it is easy if we have to deal with the type of overfed children in whom a farinaceous diet is exclusively allowed for not longer than one week, and will then effect an easy cure of the manifest symptoms in many cases. But what are we to do with the emaciated who are, as a rule, suffering from gastro-intestinal disturbances? These can rarely be cured by dieting, though we may try Keller's malt soup. What further are we to do for patients already suffering from starch injury, in whom the tolerance for the farinacea is already exhausted? If we do not succeed in getting human milk for these cases we must neglect the spasmophilic condition, as far as the diet is concerned, and we must use all our efforts to improve their general condition first.

The pharmacopea offers but few remedies applicable in spasmophilia, foremost of which is our old and trusted standby, phosphorus in cod liver oil, 0.01 of the former in 100 c.c. of the latter, 5.0 A.M. and P.M. Calcium in the shape of the lactate or the acetate 1-2 to 1 gramm dissolved in water 3 i.d. has also been advocated.

During the acute convulsive paroxysms nothing is better than absolute rest; this is much to be preferred to the excitement and bustling activity usually prevailing around these cases, though I fully acknowledge that it is much easier to appear to be busy doing something for the patient and that this also may make a better impression on the family and the neighbors who usually gather in full force around these cases to offer their unsolicited advice and previous experiences with other doctors. If you feel that you cannot refrain from doing something for the patient you may give some chloral hydrate by the rectum.

Immediately after the eclamptic seizure, but not during the same, a lumbar puncture may prove beneficial and prevent a recurrence, although the lumbar fluid is usually found to be normal in these cases.

Should we use an evacuent for the bowels in these cases? I think not, the excitement frequently caused by giving these, especially the favorite castor oil, far outweighs their problematical benefit.

For latent spasmophilia and laryngospasm the bromides may be tried: best of these is a new preparation, the calcium salt.

For these last named conditions, especially for laryngospasm, you should recommend complete rest. These children should be kept free from every form of excitement, they should not be played with and not irritated; you can easily imagine that later on it will take some time and patience to make them obedient.

We trust that in the foregoing we have succeeded in bringing before you the Protean picture presented by Spasmophilia and in showing you the importance of this subject, though we have still much to learn about its true nature. The great number of latent cases, as well as of laryngospasm and tetany makes us realize, that spasmophilia is one of the most frequent and at the same time one of the most important anomalies of infancy.

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THE AIMS, OBJECTS AND METHODS OF STERILIZATION OF MILK

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The dangers attending the early periods of life have always been realized, but systematic effort to guard against the risks to which the infants of the poorer classes are exposed, is a comparatively recent development. For many years attention had been arrested by the high mortality during the earlier years of life, and it had been customary in statistical returns to differentiate the deaths below five years of age from the deaths taking place above that age. It was, however, about 1884 that the enormous wastage at the very beginning of life, by the deaths of infants below twelve months of age, began to be realized, and the Local Government Board directed special investigations to be made into its causation.

So far as Liverpool was concerned, the great number of insanitary dwellings, the cellar dwellings, the overcrowding, the defective scavenging, the great prevalence of intemperance, ignorance, extreme squalor, the dirty and neglected condition under which large sections of the laboring classes and their families were living, were obvious contributory factors in the destruction of infant life. As improvement has proceeded and some of the grosser factors are gradually lessened or eliminated, it is obvious that necessary care and attention are not given to the infant; very commonly it is handed over to the custody of little children or irresponsible persons, whilst those really responsible are engaged in some other occupation. The rapid increase in the numbers of the little ones makes it almost impossible for them to receive proper attention, even when the care of the mother is not diverted by going to work. The children of the very poor are in this way exposed to neglect and inattention which, together with improper food and scanty clothing, are reflected in the sacrifice of life.

But there is one outstanding fact which points the way very clearly to one direction by which this sacrifice may be lessened.

Mortality amongst infants is always highest during the summer and autumn months, a severe and fatal form of cholera regularly appearing among infants during those seasons; it was on the suggestion of Dr. Ballard, of the Local Government Board, that the writer carried on an investigation during the summer and autumn periods of 1884-5-6-7 into the causation of this prevalence. The investigation was facilitated by the then system of vaccination stations at which mothers assembled, and it was easy to substantiate the conclusions arrived at from other sources. The evidence was very clear that it was associated with polluted food; it was conclusively shown that infants whose mothers did not suckle them fell victims of this disease in a proportion fifteen times as great as those infants who were fed in the natural way; it was found that the substitutes usually given for mother's milk were eminently unsuitable in character, or were grossly contaminated by exposure to polluting influences before they were given to the infant. No one has ever doubted that there is only one way by which infants can be properly fed, and that is by the mother's milk, some of the reasons for this being that milk, as nature intended it to be given to infants, is never once exposed to the air, that it passes directly at the time of the manufacture in the gland, to the stomach; its composition, temperature, and mixture adapt it to the varying needs of the offspring as its age increases; it has neither abstractions, adulterations, preservatives nor uncleanliness; it is, moreover, bacteriologically clean and pure. No artificial food can equal this.

Without referring further to the great sanitary operations gradually evolved as time progressed, the more specific methods adopted in lessening this form of disease may be summarized to include instruction for the mother, more healthful surroundings for the infant, and above all, when the mother's milk was not available, to ensure a clean and suitable substitute for it. It became more and more apparent that educative measures were required by which the mothers in the poorer districts should receive some advice and guidance in regard to the feeding and rearing of infants, more especially during the hot weather; in 1897 a staff of female inspectors was inaugurated for the special purpose of dealing with the question on educational lines. Progress was slow—discouragingly so to those who could not appreciate the difficulties to be overcome and the magnitude of the task undertaken. One great deficiency was the frequent inability of poor mothers to follow the directions given. Progress, however, did result, the female staff, little by little, was added to, while various philanthropic associations co-operated with the Health Committee's female staff. Among them may be mentioned the Liverpool Ladies' Sanitary Association; small day nurseries were established in Everton Road and Juvenal Street, and more recently in Beaumont Street, Smithdown Lane, and Hill Street. Their work was useful, but necessarily limited to the immediate vicinity. Cases of infantile cholera were treated at Fazakerly Hospital, the Royal Infirmary and the Stanley Hospitals, without encouraging results.

In 1894, Dr. Dufour, of Fecamp, was suggesting for infants whose mothers could not suckle them the advantages of providing a suitable food ready prepared, and in such a manner as to need little, if any, attention, so as to be readily given to the infant in the simplest way, with the least trouble to the mother, and with the least risk of contamination by exposure in doubtful surroundings. Cow's milk modified so as to imitate human milk, and by sterilization rendered free from disease producing germs, and sent to the home in bottles so fastened that contamination would be impossible, but could be used as infants' feeding bottles, were the bases of Dr. Dufour's methods.

The system was adopted temporarily at St. Helen's in 1899, and the Liverpool Health Committee, among others in this country, resolved to make use of it in 1901. This system has gradually grown and extended and its usefulness is placed beyond doubt. The method, modified perhaps in detail, has for many years been largely used in France, Germany, Spain, United States, and elsewhere, and has proved of the greatest value. It has far outlived the adverse criticisms which were originally directed to it, and its favor with the medical profession is evidenced by the fact that last year some 600 infants were sent by the doctors in Liverpool to be fed in this way when other foods had been tried in vain.

In Liverpool alone some 25,000 infants have been fed by it, and attention may be called to some of the points in the method now adopted. Mothers who are suckling their infants, but whose milk supply is in danger of failing, perhaps from insufficiency of food, are recommended to apply for milk for themselves. In many cases, the supply of milk given to the mother enables her to continue to suckle the infant.

The milk is distributed from five depots and from some twenty-eight dairies.

It must not be supposed that all difficulty is ended when food suitable for the infant is handed over under suitable conditions; even then, unhappily, the mother cannot be trusted to use it properly, and an immense amount of home visiting, watching, and guidance are still necessary to ensure its proper use.

These mothers are recommended to apply under such circumstances by the superintendent of midwives, midwives in various districts, midwives, through the medical office; by the lady sanitary inspectors, matrons and nurses at Liverpool

Lying-in Hospital, sisters in charge of the district homes, doctors at the North and South Dispensaries, and also at the Medical Mission, various charitable societies, also by other mothers who have themselves benefitted by taking the milk.

Generally speaking, infants are brought to the depots on similar recommendations, the greater number, however, being recommended by mothers who have had experience of their value.

Humanized milk is supplied for infants whose mothers are not able to suckle them; in some cases it is supplied to infants during the day while the mothers are out working, and the mother herself will nurse the infant at night.

Nursing mothers are supplied with five bottles of milk daily, each containing 6 oz., at a charge of 2d per day. A limited number are allowed to be supplied at 1d., or free, in accordance with the needs of the applicant.

The conditions which govern free milk, or milk supplied at 1d. daily, are chiefly:

(1) Mothers who have been paying 2d. regularly, and cannot continue, either the husband is ill or out of work, and if the milk was not reduced in price they would not be able to continue.

(2) Mothers whose husbands are out of work at the time of admission.

(3) Cases recommended by midwives, where the earnings of the family are not sufficient to provide nourishment for the mother.

In the above cases the milk is only supplied for a short time until means have been found whereby the milk can be continued at 2d. daily, or is paid for by a charitable society, and in some cases referred to the Poor Law authority.

The price of a full day's supply for each infant is 3d., a few are allowed to receive milk at 1½d. or 1d., or free, as the superintendent may decide. The same conditions govern the reduction in the price of infants' milk as apply to the mothers receiving milk.

The children are brought to the depot, from which the milk is received, each fortnight to be weighed, note is made of the progress, the milk supplied is altered, as the case may require, care and cleanliness of the child are noticed, and comments are made if necessary.

About one-fifth of the cases are supplied with milk through agents in various parts of the city (twenty-eight in all). A weekly charge is made by the agent; where a customer pays 3d. per day, the agent makes 3d. weekly; 2d. per day, the agent makes 2d. weekly; and 1d. per day, the agent makes 1d. weekly. A register is kept of the dairy cases, as well as a record book.

The infants supplied with milk through dairies are visited by the special staff at the depots, progress is watched, and notes made in the case books.

It is very necessary in some cases to visit children who are supplied directly from the depot. Sometimes older children are sent with the infant on weighing days, the mother being out at work, or possibly ill; the progress is not always satisfactory, and the elder child does not know why. Sometimes milk supplied for one child is divided between the baby and an older child. This is not allowed, and where suspected, a visit to the home is made. Any complaints received by post, or notes brought by children, are attended to in the same way.

The method of sterilization adopted is by heat, the milk being suitably mixed, bottled, and afterwards sterilized.

Considerable interest attaches to the renewal of experiments in connection with the electrical sterilization of milk. This method is full of promise, but it has not yet been possible to adapt it for the purposes now under consideration.

DRIED MILK

Dried milk is frequently used and the demand for it is on the increase, the number of children being fed by that means having practically doubled during the last twelve months.

All the children were delicate on admisssion, and other foods, including in some cases sterilized milk, had been tried and found not to agree; the dried milk used is supplied by the West Surrey Dairy Co., Ltd., Guildford.

It is found necessary to be very careful in recommending dried milk, in poor homes especially, for the following reasons: it is not at all easy to mix, and careless people will not take the trouble to make a smooth paste first, and add the water gradually, consequently the child is given a bottle of "lumpy" food which cannot be drawn through the teat unless the hole is made larger, which causes trouble; it cannot be mixed in a feeding bottle, a cup and spoon have to be used, and careless people neglect to wash them after each feed has been mixed. Feeding bottles have also been found dirty.

During a recent visit to Leicester in connection with this subject, the superintendent of the depots noticed particularly the better appearance of the Leicester poor, compared with those of Liverpool. They were cleaner and more intelligent; this is to be accounted for by the fact that there is practically no casual employment in Leicester, the wages, though small, are at least regular. In Liverpool the parents of three-fourths of the children receiving milk from the depots are casual laborers, or dock laborers, and consequently the work and wages are uncertain and the habits of the people careless, and they cannot be trusted to measure and mix the food properly, or cleanse the bottles, etc.

A few years ago a visit was paid to each house in which the death of an infant had been registered. The object of the visit was to ascertain, among other things, whether there was anything in the surroundings of the family or in the physical condition of the survivors which suggested that the infant had any exceptional adverse condition to contend against. The visits were made consecutively as the deaths were registered, the only selective action being the omission to visit houses of the better class. The results showed that in 874 families, 3,801 infants had been born, and of that number no fewer than 1,895 had perished, practically all in infancy, representing an infant mortality of 498 per 1,000.

A somewhat similar line of inquiry has again been carried on for a period extending over eighteen months ending December 31, 1913, the homes of 1,443 families having been visited in sequence. In these families 7,429 infants had been born alive, and of this number 3,988 were living at the time of the inquiry. Under twelve months of age 2,693 of them died, showing a rate of infantile mortality of 362 per 1,000 births, and it is interesting to notice that by far the heaviest mortality among these was during the first month of age, no fewer than 814, nearly one-third of the total, having died at this early period. After the first twelve months and below two years, there were 399 deaths; between two and five years 270, and over five years 79. It will be seen, therefore, that the heaviest mortality period was the first month, and as the age increased the chances of life grew. The number of deaths under twelve months of age represented a mortality rate of 362 per 1,000 births.

The table is as follows:

TABLE SHOWING THE ACTUAL MORTALITY AT EACH MONTH OF AGE.

Age	Total numper of deaths	Deaths about which inquiries have been made
Under 1 month	814	447
“ 2 months	253	143
“ 3 “	192	118
“ 4 “	206	105
“ 5 “	209	106
“ 6 “	168	97
“ 7 “	147	69
“ 8 “	138	91
“ 9 “	146	77
“ 10 “	156	94
“ 11 “	134	74
“ 12 “	133	79
	2,693	1,500

Side by side with families in which this heavy mortality had occurred were others in which every member of the large families had survived. The photographs illustrate two of each, and it will be difficult to discern the reason among the survivors, as to why other members of the family should have perished.

Although the objects in view in the sterilization of milk have been mainly to adapt it for the use of infants, yet it is sufficiently obvious that the method insures purity for all milk submitted to the process, and is, for example, a great safeguard against tuberculosis, or other milk-borne disease. As there are still a few people who are interested in the milk supply, and who have some confused idea that sterilization implies a laxity in efforts to ensure purity at the source of supply, and prevention of contamination during transit, I think, for their benefit, it may be necessary to say that nothing of the kind occurs; in fact, those centers which have been most assiduous in guarding the purity of the milk as distributed, have been the very ones most assiduous in safeguarding it from its source onwards. It would be out of place to enlarge upon this, or to go into detail into the many measures for which special Parliamentary powers have been obtained, and which many of the great centers of population have adopted. I would like to remind you, however, that in New York, all milk which does not come up to a certain standard requires to be pasteurized.

Finally, and again without going into detail, which can be found in the Annual Reports on the Health of Liverpool, I wish to state that out of 17,574 infants coming promiscuously to the depots, at varied ages and in conditions of health below the average, the mortality was 88 per 1,000 as against an average for the last five years of 138 per 1,000 for the whole city, 83 for the best districts, and 214 for the worst districts.

But it must be remembered that (a) the figure 17,574 includes a very large number of children which are sent by doctors and others, in which every other kind of food had proved fruitless, and in which the condition of the infants was extremely precarious, and it must also be remembered that (b) in the rate for the whole city, and for the best and worst districts, are included also breast-fed infants; clearly, if breast-fed infants were excluded, and the artificially-fed infants only taken into account, the rate of mortality among them would be enormously higher, and would show even more forcibly the advantages of the sterilized food, which is, of course, an artificial food, over other methods of artificial feeding .

THE CONSERVATION OF CHILD LIFE

Presidential Address, delivered at the joint session of the New Jersey State Pediatric Society and the Medical Society of New Jersey, Spring Lake, N. J., June 29th, 1914

BY MARTIN J. SYNNOTT, A.M., M.D.
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Many factors influence the conservation of child life: heredity, the physical and moral qualifications of the parents, early care, environment and training, the school period, and finally the right preparation for marriage and the begetting of offspring, along with the proper appreciation of the civic and moral responsibility which this entails. So that we have a circular chain to consider, each link of which is necessary for the continuity of the whole. Shakespeare's seven ages of man are all affected by parental influences, or in turn influence future generations.

PRENATAL CARE

The latest reports of the U. S. Bureau of the Census on mortality statistics show that slightly more than 42 per cent of all the infants who die, do so during the first year of life, and that of this 42 per cent almost seven-tenths die as a result of conditions existing before birth or of injury and accident at birth. These facts show the importance of proper prenatal care.

The excretory organs of a pregnant woman—the bowels, kidneys and skin—should be kept in the best possible condition, because during pregnancy the mother must get rid of not only her own waste products, but also those of the unborn child. It will be found, therefore, that a light, laxative diet, which is at the same time satisfying and nutritious, will best tend to keep her in health. An ideal diet includes a relatively large proportion of liquids, a small portion of meats, and a correspondingly generous proportion of fresh fruits and vegetables.

Measures to prevent constipation: exercise for at least two hours of each day in the open air, and as much more as possible; proper clothing, sufficient to keep the body suitably warm in order to maintain an even circulation of blood and to keep the sweat glands active; plenty of fresh air night and day; these are the points the physician should most emphasize. He should also instruct the prospective mother in the proper care of the breasts and nipples, informing her that it should be her hope, as well as her first duty, to nurse the coming baby. With this object in mind these organs should be carefully looked after. Ample room for the development of the breasts should be allowed at all times by loose clothing. Special measures to remedy retraction of the nipples should be carefully inculcated; also the care of the teeth, which seem to be more susceptible to decay during pregnancy than ordinarily—owing to the demand for lime salts needed to build up the child's skeleton, and partly to the effect of acid regurgitation, causing cavity-formation and loosening.

Nausea and vomiting, "the morning sickness," heartburn, varicose veins, hemorrhoids, cramps, leucorrhœa, all may require advice or appropriate treatment. A contracted pelvis should be recognized, and labor induced early if the pelvimetric measurements show danger.

Many, if not most of the complications of pregnancy, including toxemia, eclampsia and miscarriage, are preventable, and the expectant mother should be instructed to keep in close touch with her physician so that danger signs will be promptly recognized.

INFANT FEEDING

It goes without saying that natural feeding for the newly-born infant is the best method, and that every mother should nurse her baby. Pediatricians properly lay great stress on this point, and many go so far as to assert that it is always possible. This has not been my experience, however, and I have seen many failures in maternal nursing where all conditions were favorable and where the mother made determined and conscientious efforts, even to the point of keeping up the attempts until the baby's nutrition had suffered. I have seen several such failures in the families of doctors who were personally much in favor of natural feeding.

The Germans claim that the secretion of milk in the mother's breast is caused by the action of certain hormones of the placenta and ovaries, which have been active during pregnancy, so that at the time of confinement milk is already present in sufficient quantity. The further secretion is then stimulated by the normal irritation of the baby's attempts at nursing. If the child is not put to the breast the secretion will stop. If this theory is correct, by applying organotherapy and introducing into the organism placental extract, it may be possible yet to stimulate maternal milk secretion in a practical manner, and even eventually produce male wet nurses.

We must all agree that nothing should be left undone to enable the mother to nurse her child, because the prognosis in so far as the baby's life is concerned, is so much better; in the event of sickness, the resisting power much greater; and greater immunity produced against infection and contagion. When the first infection comes, or the first serious illness arises in the artificially fed, the child loses weight often in a frightful way—and collapse may result from comparatively simple ailments.

We must not overlook the fact that the secretion or better outflow of breast milk is governed by the nervous system. This is demonstrated by the sudden loss of the function after excitement, shock or depression, even if the mother has the best will to obey the advice of her doctor. We cannot overcome this difficulty and so it happens that the mother in spite of her good intentions, cannot nurse because the outflow is blocked by nervous influences. Improvement in such cases can only be expected from suggestive treatment; if the mother has confidence in you as her physician, prescribe any preparation, praise it highly, and the further judicious suggestion on the part of the attendant that the mother is capable of providing milk for her child if she but will, will often have a good effect.

It may be well at this place to caution against any elaborate preparation of the female breast, as was formerly done with applications of tannic acid or alcohol. The applications of these is just contrary to what is wished, as they render the breast more liable to abrasions which make nursing uncomfortable and often painful to the mother. All that we demand of the mother is cleanliness. No special diet is necessary for the nursing mother—merely sufficient nourishment.

One cause of maternal failure in breast feeding is the misrelation between the mother's breasts and the baby, and the fact that we cannot suit the condition of the breast to the child; as a result congestion of the milk glands may occur. An abundantly secreting breast is often an indication that the mother will not nurse for a long period. In spite of this, one should never believe in a contraindication and in no case should one neglect to put the infant to the breast. The shortest period during which the mother nurses is almost always a profit, and an artificial feeding will have better results the longer the baby was naturally fed. Even one week is of importance.

During this week the physiological bacterial flora will develop. On the first day the first invasion of bacteria takes place in the child's previously aseptic intestinal tract. This invasion results from the mouth and then the bacteria grow through the entire canal covering all walls. Normally these bacteria are harmless, and constitute the "physiological intestinal bacterial flora." In the upper part of the intestine we find Bac. aerogenes, in the middle part coli, and in the lowest part the Bac. bifidus, the latter almost exclusively.

Only the nursling fed with mother's milk has this specific flora which is never observed after feeding with other substances, as can be readily proved in the laboratory.

ARTIFICIAL FEEDING

Not every infant, however, will thrive and develop on its mother's milk. For others the supply is insufficient, and for still others there is none at all. In such cases substitute feeding must be provided. The pediatricians of the Charlottenburg Kaiserin Augusta Victoria Children's Hospital of Berlin, where the children are under observation from the first moment, have taught up much about artificial feeding, but their work is unnecessarily complex. Their formulæ are more than artificial. They are artistic. They areultra scientific and too involved to be practical outside of a hospital with a well-equipped food laboratory

In our country, on the contrary, we have of late years been cultivating simplicity, recognizing a few basic principles; and the superfatted mixtures, the excessive sugar percentages, have now been pretty generally abandoned. Methods of modifying milk that call for complex formulas often fail to give good results owing to the difficulty in having directions for such modifications properly carried out.

There is a distinct advantage to the physician, to the mother and to the baby in the employment of the simplest measures that will produce a mixture upon which the baby will thrive.

Our aim should be to avoid complicated mixtures and to reduce the whole matter to a very simple and easily understood proposition for both mother and nurse. Scientific principles need not be sacrificed, and the physician must himself know the percentage amounts of fat, protein, and carbohydrate in the mixture, as well as the caloric value of each ounce of food. Requirements of infant feeding are thus met in a simple and scientific way.

The successful feeder of children might adopt for his motto the quotation from Horace's "Ars Poetica,"—

"Be not the first by whom the new are tried,
Nor yet the last to lay the old aside."

THE PROPAGANDA FOR PURE MILK

It should be the aim of every physician to use his influence as a medical man and a citizen to improve the milk supply of his community. The propaganda for pure milk is necessarily mainly an educational one. The public must be taught its importance, and this is where the physician's influence counts. The American Association of Medical Milk Commissions, when it drew up and adopted its classical "Methods and Standards for the Production and Distribution of Certified Milk," did an excellent thing in showing us just what the essential factors are. But the establishing of medical milk commissions does not by any means solve the problem. A code to be effective must be mandatory, and a scoring system should be adopted with the understanding that the producer who does not reach a certain specified percentage should not be allowed to call his product "Certified." Voluntary inspections of dairies by busy medical practitioners are bound to be few and far between, and when they are made, are apt to be hurried and inefficient. The inspections should be made by paid inspectors at regular intervals; funds for such work to be raised by the imposition of a bottle tax upon the dairymen.

Better than Certified Medical Milk Commissions, it seems to the writer would be efficient State control by a department of the State Board of Health, which, with competent paid inspectors, would take over the classification of the output of the various dairies, grade them according to percentages obtained by scoring and reject all supplies which do not come up to certain minimum requirements.

STERALIZATION.

The matter of heating milk is an interesting one. If we take nature for our guide it is evident that a baby was intended to have germ-free milk for the first months, or until the weaning period is reached, since breast milk from a healthy mother is practically sterile. For our artificially fed babies, however, it is impossible to obtain a bacteriologically clean milk. The sources of contamination in commercial milk are so numerous that the task of eliminating impurities from it is almost a hopeless riddle. The channels of food infection are innumerable—flies, insects, manure, hairs from the cows, sweat and dirt from the milker's hands. Until we are able to secure fresh pure milk for our babies who are not breast fed, the problems of early nutrition will remain complex and involved. It is true that by pasteurization and sterilization we are able to destroy most of the micro-organisms, but the evil is only partly removed thereby. Chemical changes resulting from bacterial activity before heating the milk may have produced toxins and other changes rendering it harmful if not unfit for consumption. Besides, boiling does not destroy all bacterial spores, and unless the milk is kept at a very low temperature, these soon take on activity and develop rapidly into fresh colonies. Again, some very virulent bacteria—certain strains of streptococci—have been known to resist very high degrees of heat.

Until such time as we can get fresh pure milk, I shall be opposed to raw milk for young babies, because I believe heating the milk not only destroys most of the bacteria, but makes it more digestible for the baby. I believe the objections to cooked milk are exaggerated, and that its greater safety far outweighs any possible injury to its nutritive properties from heating. The enzymes about which we used to hear so much, and which boiling was alleged to destroy, we have been shown by Lane-Claypon and others, are, for the most part, the products of bacterial contamination after milking.

IMMUNITY

It has been stated by numerous observers that babies fed for a long period on sterile milk and other sterile food, have less resisting power to various infections than babies not so carefully fed; and that babies fed on sterile food are particularly prone to tuberculosis. I am coming to this belief myself. Within the past three months I have seen two cases of this kind— the first a baby fed from birth most carefully on sterile food, most of the time prepared in the laboratory, died at 15 months from tuberculous peritonitis, which diagnosis was confirmed by autopsy; the second a case of tuberculosis of the spine at two years, in a case fed with equal care from birth on sterile food.

Our knowledge of immunity teaches us that when bacteria are introduced in the tissues they set up a reaction which in turn results in the elaboration of anti-bacterial and immunizing substances in the organism more than sufficient to destroy the invading microbe, providing the infection has not been too virulent; and when recovery takes place the individual will have in his organism an excess of these substances rendering him immune to this particular infection for a longer or shorter period. We also know that when dead microbes are inoculated parenterally into our bodies, they stimulate the production of immunizing substances in the tissues where they are injected. Upon this phenomenon depends the science of vaccine therapy, which has done so much in combating various infectious processes, and in immunization against typhoid fever and other diseases.

The experiments of Sir Almroth E. Wright and other scientific men show that immunity may be acquired by bacterial invasion of the intestinal tract, as well as by other channels, and that the presence of live microbes in the intestinal tract undoubtedly produces immunizing responses in the organism. While, therefore, there is good reason for giving young babies sterile food, this plan should not be kept up too long, and after 6 to 9 months, the child should be gradually accustomed to raw milk, providing it is clean and fresh, and from healthy cows.

WET NURSES

In selecting a wet nurse, many considerations are involved —she must be free from disease—Wassermann and von Pirquet tests should be made; she must have no home ties to interfere with her duties as foster-mother, and she must be moral. In selecting a nurse for a small baby, we take one with small breast glands, while for a strong nursling, on account of its greater needs, a nurse with milk-rich glands must be provided. This is important.

THE ABNORMAL MOTHER

One of the greatest handicaps a baby can have is an abnormal mother. We are all familiar with the various types; the timid and inexperienced mother who calls us up on the telephone sometimes once or twice daily for advice on the most trivial matters; the vacillating mother who listens to her neighbors and is ready to try some new food every day if advised to do so, no matter how irresponsible her advisers may be; the conceited mother, who having read some work on the care and feeding of babies, thinks she knows it all; and so on ad lib. Some of these women, with patience on the part of the physician, may be educated and taught self-control; others may be intimidated or brow-beaten into submission; others, fortunately the smallest number, are hopeless, and the sooner they leave one, as they are pretty sure to do, the better for our peace of mind. Their unfortunate offspring, unless by a special dispensation of a kind Providence, are doomed to an early athreptic death or to a neurotic existence.

FREQUENCY OF FEEDING

Many children are born with hereditary pathological conditions or disturbances, as can be observed from the first day. Some infants thrive and develop constantly—others more slowly, even though the conditions are equally favorable. Thus it is characteristic for the normal infant to rest quietly most of the time; only occasionally when wet or hungry, will it cry. Otherwise, it will hardly be noticed. On the other hand infants are found crying without reason, although kept warm and dry.

These restless infants are descendants of neuropathic parents (of course severe pathological changes must be excluded), and this justifies a classification into normal and sensitive babies.

Reasons for the continuous crying and for the restlessness cannot be found. The slightest irritation is sufficient to cause great excitement.

Often the mothers of such continuously crying neuropathic individuals put their nurslings repeatedly to the breast, 8 to 10 times a day. This is a great mistake since such babies form bad habits readily, and consequently the formation is laid for greater difficulties in the future.

The normal number of feedings in 24 hours is five for the ideally developed infant, that is to say every four hours. Unfortunately not all babies are normal average individuals. A few are satisfied with four meals. If one will proceed more cautiously the child may be given the breast six times a day (3 hour intervals) with a pause of 8 hours during the night. With the amount taken during these periods the normal infant will be in equilibrium. In this the Germans differ from the French who give the breast to the child at least ten times a day, a procedure which makes nursing a very disagreeable function for the mothers.

The Germans claim that the "inanition fever" of Holt is not due to inanition but deficiency of fluid. Experiments at Charlottenburg demonstrate that children survive starvation for three weeks without fever, if enough fluid is given in the form of tea decoction or boiled water (150-250 c.c. daily).

PHYSICAL EXAMINATION.

When called upon to see a baby for the first time a careful physical examination should be made, and a record of our findings preserved. Of importance is the relative circumference of the head and chest. Both are approximately equal with an ideal child; the skull perhaps prevails a little. In case of a too large head, abnormal conditions are present, and this finding points to some congenital defect, such as hydrocephalus, rickets, or syphilis. On the other hand, the chest circumference may be pathological, perhaps, from thymus, or mediostinal tumors. Of less importance is the length of the body.

Then the temperature is taken, and the character of the stool noted,—sometimes a laboratory examination being of value. But one cannot make a diagnosis by examination of the stools alone, as some enthusiasts claim.

The mouth must be examined. We have by the way, entirely discarded the old routine methods of cleaning this cavity and only under observation of the aseptic rules. The mother and nurse are to be cautioned against the use of boracic acid solution in the mouth and nostrils, and against using nursing nipples fresh from saturated boric solution. Dr. Coit has taught us how prolific a source of trouble this is. In older children the teeth are to be examined for caries, and the tonsils and nasopharynx for evidence of disease or obstruction from adenoids.

THE CALORIC METHOD.

One serious drawback in the percentage method of feeding in the past has been that it gave us no definite guide as to an infant's digestive capabilities. When a feeding case came to our attention for the first time, we had, under this method, no definite guide in the selection of an initial formula. Consequently in order to be conservative, it was our custom to write out a very weak formula under which the baby lost weight rapidly, or at any rate, did not gain. In this way valuable time was often lost.

The Caloric Method of feeding, which takes the child's body weight as a basis, I have found of very great value in obviating this difficulty and in enabling me to rapidly determine upon a proper initial formula in a given case. It is simple to acquire, and only a very little effort of the memory is necessary to master the essential requirements of the system in order to put it into practical use.

CARE AFTER THE FIRST YEAR.

The physician's care should not cease with the nursling, but should extend along subsequent periods of development. Mothers should be taught to keep their babies under careful competent medical supervision for at least the first three years of life. This they are gradually learning to do, and physicians whose experience, training, or temperment, do not qualify them for infant feeding, would do well to recognize this fact in time, and refer at least their difficult cases to men who have special knowledge and skill in this specialty. It is a matter of almost weekly experience for the pediatrist to see one or more cases of mal-nutrition, poor athreptic, wizened up, crying mummies,—at six months weighing two or three pounds less than at birth; to which some general practitioner has been feeding modified milk formulae,—containing fat and sugar percentages beyond all reason.

INSTITUTIONAL CARE OF INFANTS.

The statement has been made by certain superficial investigators, that hospitals, foundling institutions, and children's wards, tend to increase infant mortality rather than reduce it and that sick infants can be better treated in their homes, even though those homes be very poor ones. Such criticism is as thoughtless as it is unjust. It would be better to study the defects and shortcomings of institutional care with the idea of remedying them rather than to condemn offhand. Hospital mortality is due to conditions readily understood. One cause is the failure of the physician to recognize the fact that very many of the more serious conditions of infancy must have hospital care and treatment if life is to be saved. The foolish attempts at treating such cases in their homes, waiting to send them to the hospitals until the symptoms are so bad that the condition is practically a hopeless one, is a factor often overlooked by those who compile hospital statistics.

In foundling hospitals, likewise, many infants are received in a moribund condition from exposure, neglect and malnutrition.

Children's hospitals and clinics are of value in gathering statistics, in studying sociological and economic conditions, illegitimacy, and many other factors influencing the viability of our infant population. The best methods of infant feeding have been elaborated in such institutions, and many of our views shown to be erroneous: for instance, as recently as five years ago we thought that the proteids of the cow's milk were responsible for most of our difficulties and failures in artificial feeding, whereas recent studies, carried out in our hospitals, have shown that the proteids are seldom at fault, but that it is much more often the fats or the sugars which are to be blamed, and that our attempts to render the proteids more digestible by the addition of various diluents, and peptonizing did nothing except to make our formulae needlessly complex.

It is true that many of the diseases of children may be treated equally well in the general hospitals, but these institutions lack the trained infant nursing, and the special knowledge of feeding and other problems which the after care of these patients require if they are to be saved*.

Not the least important work done by the Babies' Hospital directly affecting the problem of infant mortality, is the instruction of nurses. The efficiency of any nurse with good sense in instructing an ignorant mother in many things relating to the care and feeding of her baby, is immensely increased if she has the advantage of a training in a babies' hospital.

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*The Importance of Hospitals for Infants and Their Part in the Prevention of Infant Mortality.—By L. Emmett Holt, M.D., N. Y. City.

SEX HYGIENE.

The movement to introduce instruction in matters of sex into the curriculum of public schools, is only another expression of a prevailing purpose to establish in the school a dumping ground for the discharge of duties and offices that should be restricted to the home. Besides we must not forget that mental enlightenment, as such, is altogether inadequate to afford the moral check sought for by our hygienists. ''I see the better and follow the worse,'' said Ovid. Sex instruction does not necessarily bring about self restraint. It bestows light, but it does not impart power. And it is precisely an increase of moral potency that is essentially called for. We should therefore teach the children that morality, not so much as hygiene, is the absolute essential for a chaste and happy marriage. We should teach them the commandments of God rather than the physiology of sex, and emphasize morals more than hygiene. What instruction is to be given to boys and girls should be given in the home and by the Church.

Knowledge does not necessarily mean virtue. The Spartan boys and girls were taught all the mysteries of sex at an early age, but such instruction did not conduce to morality or to a race of lasting physical or mental excellence.

A boy leaving home for the first time, for college or business, should be warned plainly by his father of the dangers that beset him in the world and of the penalties he may have to pay if he wanders from the straight and narrow path. And a young girl, beginning to go into society for the first time, should be told by her watchful mother of the charms of modesty, and what types of young men she should avoid.

But the writer has no patience with those who would entrust to immature young men and women employed as public school teachers, the task of instructing growing boys and girls in sex matters,—thus starting their thoughts wandering in dubious channels, when they should be given to baseball, tennis, and other healthful sports and recreations.

In this connection a word as to Co-education may be timely. I believe this should be avoided where possible, and men teachers provided for boys, and women teachers for girls, after the age of puberty has been passed.

EUGENICS.

This paper would not be complete unless it contained a reference to our latest panacea—Eugenics. The author has no desire to enlist in the army of faddists who have undertaken to supply biological remedies for the social ills of mankind, and who blame heredity for all our ills. We are told that if only the unfit could be prevented from having children, there would be no weaklings or criminals in the race, and the millenium would soon be here. We should, therefore, prevent the unfit from propagating themselves and their kind, and develop our laws until we eliminate such people from our population. As it is, our gaols and our asylums are overcrowded, our criminals and our insane are increasing faster than the population, etc., etc.

Earnest and sincere men applying eugenic knowledge to the affairs of men, are prone to forget that too strict devotion to one science narrows their outlook, and that while meaning to do good, they are in reality doing much harm. They forget that unfavorable environment is often a more important factor than heredity. Thus, criminal parents have criminal children, not necessarily because of heredity, but quite as much, if not more, because the environment tends towards criminality.

Those much intent on heredity in order to illustrate how much good heredity counts for quote the case of a famous college president, of whose decendants 200 have been traced, two-thirds of whom are noted for having done something well worth while. They quote this as proof beyond doubt that all that is needed is to have people rightly born, and then good comes out of it instead of evil, and the evil in the world will soon be all eradicated. But unfortunately in this instance subsequent investigations showed that the grandmother of this college president was an adulteress and the sister of two murderers.

According to eugenics, this family evidently should have stopped right there, as little could be hoped for from that stem. Fortunately eugenics were not in vogue until later, and the nation has had the benefit of his descendants these many years. Once, I believe, when the great Dr. Johnson proposed marriage to a young woman, she said that she would not accept him before telling him that she had had an uncle who was hanged. He replied in his own blunt way, "Oh, that's nothing; I have two that ought to be hanged."*

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*Our Latest Panacea—Eugenics. By James J. Walsh, M.D., Ph.D., Sc.D., New York City.

I believe that any direct legislative interference with the freedom of marriage is not only totally unnecessary but would be a much greater source of danger to morals and to the well being of humanity than the mere temporary evils it seems to cure.

Our knowledge of biology is only just beginning. After much pretended knowledge, we are just ready to admit our deep ignorance of it. Many a weakling child has grown up to be a very valuable factor for the race. Newton was so delicate that his mother, only by the greatest care and solicitude, succeeded in keeping him alive. The children of delicate parents have often proved to be very healthy and hearty. The children of very healthy parents, for no reason that we can trace, have often proved to be weaklings or have developed degenerative tendencies.

We have, on the other hand, an immense number of social ills that are much more responsible for criminality, tendencies to insanity, and the birth of weakling children than heredity is. These social ills need to be reformed. What we need is co-operation in the use of all the natural means at hand for the alleviation of social complaints.

The most we should attempt to do at the present time is to prevent persons known to have syphilis, venereal disease, tuberculosis, or other infectious diseases, from marrying. But this can be accomplished better by moral education and persuasion from the physician than by enforced laboratory tests like the Wassermann, prescribed by legislation. How utterly inadequate such tests are is shown by the fact that men have contracted syphilis and gonorrhœa the very night before marriage as the result of post-prandial dissipation following a farewell bachelor dinner.

RESUME.

Statistics show us that while with our modern methods we are saving more babies than formerly, we have not yet succeeded in lengthening the effective life very much; that while the expectancy of life under the age of five years is eleven years longer than it was generations ago, and life continues in its expectancy to be higher up to the age of forty, above that it is lower than it used to be. We are keeping alive the children who used to die under the age of five, but more die between the ages of twenty and thirty or are crowding our insane asylums and sanatoriums of all kinds. Or they are dying from the degenerative diseases shortly after forty, and a greater number than ever before, just when they ought to be the most efficient members of society. To quote a German cynical philosopher "in spite of all our best efforts, eugenics included, life continues to be at best a dangerous thing, and very few of us get out of it alive."

HYPERPYREXIA FOLLOWING SLIGHT ABRASION.*

BY ERVIN LINDENBERGER, M.D.
Louisville, Kentucky.

On September 26th, 1914, a boy aged six years was brought to me for treatment by his father. According to the history this boy had accidentally fallen on the pavement a week previously, sustaining an injury to his left knee. Upon examination I found a superficial wound upon the outer side of the left knee which was covered by a scab of dried blood, and there was considerable redness of the surrounding skin surface. The abrasion was thoroughly cleansed with hot saline solution, and a simple dressing applied. The father was requested to return with the boy in two or three days, which he did and at that time the abraded surface seemed to be granulating. As the redness and swelling had been subsided, a dusting powder was prescribed with instructions to cover the wound with this powder each time the dressing was changed.

One week after the first visit, as the wound seemed to be granulating slowly, it was thought wise to stimulate the healing process by the application of a mild solution of silver nitrate. This was accordingly done, and the dusting powder continued.

On October 14th I was hurriedly summoned, and found the boy with a temperature of 102.5 degrees F. The wound surface presented a glazed appearance, and on the inner aspect of the thigh a few inches above the knee there was a decided reddish efflorescence about the size of the palm of my hand. A large dose of calomel was prescribed, and I saw the patient this morning, at which time his temperature was 103 degrees. The efflorescence had disappeared from the thigh, but there was considerable redness around the site of the injury. This afternoon the temperature was 104.5 degrees F. There has been no pain at any time since I first saw the patient, there has been no evidence of wound infection, and no lymphatic enlargement anywhere.

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*Cinical report before the Society of Physicians and Surgeons, of Louisville, Kentucky, October, 1914.

It would be interesting to know what caused the elevation of temperature and redness of the thigh following such a slight injury.

In discussing the foregoing report, Dr. L. P. Spears said he did not believe dusting powders had any place in surgery, and especially in the treatment of abrasions, that caused glazing of the wound surface and thus concealed infectious material which should be permitted to escape. He suggested that a wet dressing should be used in all cases of this kind.

Dr. S. J. Meyers agreed with Dr. Spears, and stated that it had been his experience, in the little emergency work he was called upon to do, that dusting powders had absolutely no place in surgery. He had long since abandoned the practice of employing powders of any kind, although he had oftentimes seen them used in the treatment of burns, etc., and had previously employed them himself in various kinds of minor injuries, but he had now concluded it was bad surgery to use them. In this connection, he said that he had recently been called to see a patient with a compound, comminuted fracture, who had a high temperature which the surgeon was unable to explain. He made the diagnosis of typhoid fever, and was certain this was correct because the patient presented all the characteristic symptoms of this disease. He merely suggested this as a possible explanation of the high temperatures in the case reported. Possibly the injury had nothing whatever to do with the elevation of temperature. It was more than likely, in his opinion, that the patient had an infectious fever not related in any way to the injury.

In closing the discussion, Dr. Lindenberger said he still thought dusting powders were sometimes useful in minor surgery, that in a number of instances he had found abrasions healed promptly under the application of aristol and other similiar powders.

LATER.

Later observation of this case proved it to be one of erysipelas migrans, the course being about two weeks. There was gradual subsidence of the temperature. Complete recovery.

RETROSPECT OF CURRENT PEDIATRIC LITERATURE

Infant Feeding in Health and Disease

Under the Charge of

ALFRED C. WALLIN, M. D.

Lecturer on Diseases of Children Polyclinic Hospital, Visiting Physician
Metropolitan Hospital, Blackwells Island, Childrens Department
Physician to St. Mary's Hospital, Children
O. P. D. New York

The Wet Nurse in Hospital Practice, by Dr. F. C. Churchill of Chicago read before the American Medical Association, Poverty and Ignorance cause most of the high death rate during the first year and that 30 to 40 per cent. of it is institutional, due to babies being brought to the hospital badly nourished and diseased. In a great many of these cases modified milk does not work as well as it might, so we should use human milk more than we do; should include the Wasserman test in the examination of the nurse. The nurse can nurse her own along with another and if you can, mix in some modified milk. It was found that mothers producing 10 ozs. per day by feeding properly and good care could be made to give 50 ozs. In this way could manage to help along quite a good many babies. Having fed 715 babies on mixed food and 550 on cow's milk alone ranging from one week to one year, the mortality in the first group was 36.3 per cent.;, in the second group 36.9 per cent., both nearly the same, the management the same.

The physical condition being the best index we should weigh and measure their height. Group No. 1 averaged 3½ months old and weighed 7.6 pounds, while the second group averaged 5 months old and weighed 9.3 pounds. Group No. 2 weighing more and being older, possessed the advantage. Then group two was subdivided so that group (a) averaged 7.7 pounds, but receiving some breast milk, group (b) receiving cow's milk. The death rate for No.1 was 36 per cent.; No. 2 (a) was 44 per cent., which shows that breast-fed do the best. Breast milk supply is limited. Once in a while we run across a case that does not do well on breast milk, but a combination of water, fat, proteid, and sugar does better. A healthy baby should have breast milk twice a day. He found that the average death rate has not been lowered since the systematic use of breast milk feeding.

Infants should not be kept too long in the hospital, they are apt to contract communicable diseases, also are subject to complications. If cannot get breast milk at home, they should be put in charge of social service.

Infantile Sensilization to Egg Albumin, by Dr. H. M. Rich in the Journal of the Michigan State Medical Society.

It has been known that for a long time that a little egg albumin would make a few children very sick. It is called idiosyncrasy and the mother supplied the prophylaxes by removing the cause from the diet. The principle of sensitization or anaphylaxis is well established. Egg-albumin anaphylaxis, one of the most common ones, he finds only 15 cases reported in literature. He himself has had 10 cases within the last few years. Reports case No. 1—Was breast fed for several months, parents well; at 10 months the mother gave the baby a little white of an egg for the first time; in a few minutes two large blotches appeared on face, eyes were swollen shut, cried, vomited and was restless, sharp rise of fever. Three days later was given two drops of white of egg; this time the blotches appeared, had fever, loss of voice. At 15 months of age he was given a little soft egg off the tip of a spoon. He began to cough and kept it up for an hour, lost his voice, lips and eyelids were swollen, itching of the eyes. This was all repeated within a few days with the same result. At the age of 20 months he was playing in the yard and picked up an egg beater and put it to his lips and in two minutes the lips were red and swollen and lasted for several hours. At 3 years of age he was given a little yolk, then the white was given in very minute doses and kept up until at the end of a year he could take a whole egg. He is not susceptible to other albumins. Has auto-intoxication twice, otherwise has been well. An aunt suffered with the same trouble. Was subject to asthma. At the age of 30 years, died from anasarca and nephrites and without having overcome the sensitization to egg-albumin. The case is interesting on account of the asthma.

Case No. 2 presents the same symptoms except the vomiting and dirrahoea and also is susceptible to asthma which might be brought on by smelling roses.

Case No. 3 sister of No. 2, presents some symptoms except she ran a fever up to 104 and was subject to hay fever instead of asthma.

Causes—In contact of the egg-albumin with the mucous membrane can be caused by scarifing the skin. Anaphylaxis is supposed to be the underlying cause generally found in healthy and well cared for cases.

Heredity is found to appear in several members of the family.

Seven of 10 cases were males, age was from to 14 months.

The lesions were Urticaria like Edema of the mucous membranes of the mouth and stomach, also vocal cords and larynx.

The severity depends on the amount of egg-albumin taken as well as on the susceptibility, swelling of lips, blotches on skin, crying, abdominal pain, vomiting, diarrhoea and fever, some cases loss of voice and cough.

Diagnosis is easily made because symptoms appear so prompt after taking the egg, and every time the egg is taken.

Dr. Clemens saw a case that was moribund but it got well. There is no death on record but some appear to be very sick. Prognosis therefore, is good, but the sensitization follows them into adult life. Quite a large per cent. are subject to asthma.

In treating these cases a purge should be given, cold compresses and cooling lotions can be applied and that is all that can be done. One should try to overcome the sensitization.

Dr. A. T. Schofield did this for the first time in a boy, age 13 years, by giving a pill containing one ten-thousandth of the white of an egg in calcium lactate, given once a week. The dose gradually increased. It took nearly two years to produce a cure, this was in 1908.

Herschell, gave charcoal, but it does not give the result.

Schofield treated another case which took nearly a year to take a whole egg. This treatment should be more thoroughly tried out.

Nutritional Disturbances of Infancy; Their Management, by S. Feldstein, M.D., Brooklyn, N. Y.

The treatment of the various forms of malnutrition cannot be gone into without their classification and nomenclature.

During Widerhofer's time, it was the custom to classify all ailments according to their pathology. Later came the bacteriological era, but as in a great many disturbances the cause is a functional one, Czerny and Finkelstein made clinical and chemical studies and showed that in gastro-intestinal affections of infancy, there were important changes in the general metabolism. These Doctors found that qualitative and quantitative changes in the food were capable of producing definitely injurious effects on the nutrition of the body.

Finkelstein drew attention to the subject of food tolerance. Food consists of foreign substances to the body, and must be acted upon by the digestive system before it can be taken into the body.

This process of assimilation demands the expenditure of energy which varies greatly for each article of diet. When great demands are made we have exhaustion, followed by digestive disturbances. Foods that are not assimilated become actively injurious agents. The assimilation capacity and consequently the tolerance for food marked congenital variations in different individuals. As a result of infection, starvation, and abnormally low or high temperature, the tolerance is temporarily lowered. To maintain the physiologic activities of the various metabolic functions of the body, the food must be perfectly adapted to its assimilatory capacity or tolerance. The normal tolerance of an individual may be passed by giving a superabundance of food, or a normal amount of food may be given to an individual whose tolerance is permanently or temporarily below normal. In either case injury results. Czerny and Keller speak of nutritional disturbances as due to alimentation, infection or constitution; but found the systems were practically identical no matter what the etiology is. So both the functional and symptomatic classification has been replaced by a classification depending on the degrees of tolerance. Either there is chronic constipation with so-called soap stools or an acute disturbance with diarrhoeal stools. We thus have four states of nutritional disturbances:

1. Weight disturbances.
2. Dyspepsia.
3. Decomposition.
4. Alimentary intoxication.

Weight Disturbances. There may not be a loss of weight, but a failure to gain and so according to age are below normal weight. Stools may be normal in appearance, but may be the so-called soap stools. They are very dry greyish-white and foul. They leave no stain on the napkin and closely resemble putty. Their dryness is due to the fact that in them neutral fat is largely replaced by fatty soaps which do not absorb water. The light color is not due to the lack of bile, but to a reduction of the biliverdin into colorless urobilinogen. Other symptoms are pallor of the skin, flabbiness, and weakness of the muscles, distended abdomen restlessness at night, and occasional rise of temperature. In most cases due to overfeeding with milk. The fat in the milk is not well borne. Formerly, the presence of curds in the stools was thought to be due to casein indigestion, but has been shown to be due to fatty soaps. To reduce the fat we should reduce the milk, either by reducing the quantity at each feeding, or by lengthening the interval between feedings, or both. This may work in mild cases; but in severe cases will not. The fat should be reduced more and the loss in calorie value made up by increasing the carbohydrates. The kind of carbohydrate to use is dextri-maltose, which is thought to be the best one, milk sugar is thought to be the poorest, having been found to be the least assimilable and the most fermentable of the carbohydrates as a diluent. In case, use barley or oat meal water, and if that fails try wheat flour, (2 to 5 per cent.), but in infants under 3 months old must be very careful, as they do not digest it well. Czerny and Keller found that the combination of two carbohydrates as flour and dextri-maltose will immediately cause a gain in weight. A case of long standing should begin with Loeflund's malt soup or buttermilk. We must have definite indications for its use as to degree of tolerance for carbohydrates. Its careless employment may lead to serious intoxications and collapse, but if given with proper indications the results are often marvelous, but may be due to the retention of water.

Malt Soup, prepared as follows:

No. 1. Wheat flour 1 1-2 ounces.
Milk, 1 quart.
Mixed and strained throught a seive.

No. 2. Loeflund's malt soup Extract, with potassium carbonate, 3 ounces
Water one quart.
Mix the two and cook slowly in a double boiler for 1-2 hour, then bring to a boil.

For the younger babies make only one half of this quantity. From this the infant is likely to have 3 good stools per day.

Wander of Bern has introduced a preparation of flour and malt extract in a powder together called Maltosen, which can be made up with milk, 1-3 quart, and water 2-3 quart, 4 ounces of the maltosen. This is then boiled, but some infants can not stand that much fat, so he uses buttermilk instead of the milk; but the buttermilk being so low in caloric value he must add carbohydrate to make it up. Boil the buttermilk and flour first, then add the sugar.

Very young infants, should get them on the breast if possible, as we have not only the loss weight to deal with but the danger of infection. The breast milk affording greater immunity. If they do not do well on the breast, can try one feeding per day of the malt soup. In a week can try a second feeding per day and finally feed entirely artificially.

Dyspepsia. Generally follows weight disturbances with a further deduction of the tolerance for food. The diarrhoea may be produced by fermentation of the carbohydrates and aided by the mineral salts of the whey; secondarily the fats are spilt up into fatty acids which stimulate peristalsis and intestinal secretion. In the treatment of dyspepsia we must reduce the carbohydrate and fats. The barley water and skimmed milk works all right in the milder cases, but if bad cases of diarrhoea we may need to keep up the barley water for a longer period, and on adding milk often the diarrhoea is made worse, but the barley water is so low in calorie that we would get starvation. Thanks to Dr. Finkelstein and Meyer, an article of diet has been produced which meets the therapeutic indications in this type of disturbances. They found that the casein of milk is a direct antagonist to intestinal fermentation of the carbohydrates and fats. They produced a food now known as Eiweissmilch or protein-milk which contains very little sugar, a small quantity of fat and mineral salts and a considerable amount of casein. Despite the removal of the fat the caloric and nutritional value of protein-milk (with 3 per cent. Nahrzucker which is now regularly added) is but slightly less than that of breast or cow's milk. Prepared as follows:

A teaspoonful of Limon't essence of rennet is added to a quart of milk and allowed to sand in a water bath at 42° C. for 1-2 hour. The curd is then put in a cheesecloth bag and the whey allowed to drain off slowly without existing pressure. This process usually takes about an hour. The curd is then scraped through a fine seive with a wooden mallet or spoon, half a quart of water being used for repeatedly washing it, 1-2 quart of the best buttermilk obtainable is then added and the whole mixture boiled for a short time. In order to obtain a finely divided curd it should be beaten and well mixed with an egg-beater. The desired amount of sugar which is usually 3 per cent. Nahrzucker dissolved in a little hot water and added while the food is being boiled. If to be shipped or kept for any length of time should be sterilized in a steam sterilizer. The curd must be very fine and look like milk and should readily pass through a nipple. The taste can be made more palatable by the addition of saccharine.

The technic of its preparation is too difficult for the ordinary person, so is being prepared by the Walker-Gordon laboratory. There is a concentrated protein milk possessing the advantage of the curd being washed with 1-2 quart of buttermilk and no water being used. In moderate cases no food is given for 6 to 12 hours. Boiled water or a weak tea can be given for drink. There is prejudice on the part of the mother against using plain water for fear of starving the baby. The tea should not be sweetened with sugar, but can use saccharine 1-2 teaspoonful to a cup. Should clean out the intestinal canal with castor oil and a gastric lavage is useful, no obstinate vomiting. If the child is pretty well cleaned out should not give laxatives after a day or two of the tea, can give undiluted protein-milk, 10 ozs. in 24 hours, can increase about 3 ozs. per day until 1-5 of the body weight is given.

No attention to be paid to the stools; but as a rule they become the soapy stools within 3 or 4 days. We remain at 1-5 of the body weight until the diarrhoea has disappeared, then can increase the carbohydrate to 5 per cent. or to 7 per cent. if can stand it. Some times they gain faster with the addition of flour.

In chronic cases should not keep this up for a longer period on account of lowering the tolerance by inanition. In the chronic cases we reduce the carbohydrates to 2 or 3 per cent. and substitute the more assimilable dextri-maltose for the milk sugar. Those who have mastered the minute details of the method of administration of protein-milk place this next to breast milk in the treatment of these cases. There is great difficulty in getting a reliable product so there has been invented several substitutes which are not much account. It is peptonized milk in which a part of the whey has been taken off reducing the carbohydrates and increasing the calcium.

Decomposition, or infantile atrophy is known by the loss of weight. The temperature is usually subnormal and pulse weak and slow.

In addition to disturbed absorption and assimilating there is actual destruction of tissue, with a high intolerance for food and loss of weight. The fatal issue is due to an infection such as furunculosis, baravertibual, pneumonia or alimentary intoxication. The absorption of food is delayed by the formation of fatty acids in the intestines. The body protects itself against the acids by throwing out its reserve mineral deposits and later by giving up some of its mineral salts from the low vital organs. There is also a great loss of water. We should be guided in our diagnosis by the previous history of the case. In the treatment we should avoid both inanition and overfeeding. Inanition reduces the tolerance so that recovery is impossible and makes the patient liable to intoxication.

Dr. Feldstein says we must resort to breast milk or protein milk. Breast milk the best we have is too rich in carbohydrates and fats and it is hard to regulate the exact quantity to be taken, so he expresses the milk (6 to 10 ozs.) per day and foods can be increased 3 ozs. per day until 1-7 of weight of the body. Can give abundance of water in the form of weak tea, sweetened with saccharine. This may be followed by discouraging symptoms but soon will notice the general condition to improve, may be slow at first, the body must first restore itself to its normal chemical composition before it can gain in weight. It may be a good thing to try one feeding of malt soup or buttermilk per day, but must return to milk mixtures very gradual. When unable to resort to breast milk should try protein milk. It enables us to give sufficient quantities of food without increasing abnormal fermentation in the intestines. At first should try the tea for six hours. For the next 24 hours 200 to 300 grams or 8 to 10 ozs. of undiluted protein-milk is given at intervals of 2 or 3 hours. Every other day should increase the food 3 oz. until we are up to 1-5 of the body weight. Also can add 3 per cent. Nahrzucker as soon as we have reached to 1-5 of body weight. Should increase the carbohydrate to 5 per cent. and later to 7 per cent. if they can stand it. The lack of carbohydrates is marked by subnormal temperature and languor.

Alimentary Intoxication, one of the most serious of the nutritional disturbances of infant life rarely occurs as a primary condition, it follows decomposition or general infection or severe dyspepsia. We find change in the function of nutrition. Finkelstein found it to be non-bacterial. Untl he proved this it was believed to be due to bacteria.

and their growth in the intestinal canal. Also there has been no bacterial loxins found in decomposed milk. These cases not thought to be due to decomposed milk. Under the same milk supply one or more babies will develop intoxication while most of them will not be disturbed. It is thought to be metabolic disturbance.

Symptoms are slight rise of temperature, diarrhoeal stools and loss of weight. Intoxication at the beginning we have apathy and somnolence, later we have fever, collapse, disturbed sensorium, peculiar deep respirations, diarrhoea, albuminuria and casts, alimentary glycosuria leucocytosis and great loss of weight. All the causes of alimentary intoxications are not yet known. Carbohydrate fermentation aided by the mineral salts of the whey play a part in the cause. This develops an acid intoxication, also a marked loss of water from the tissues and a disturbance of oxidation. To remove the cause should stop all food for 24 hours. Water in the form of weak tea, a plenty should be given, nothing else to be added.

In starving the food can give carbohydrates 2 1-2 to 3 per cent. with less the tissues are unable to retain water which is very important; but in some cases even this causes fermentation. Casein has the ability to stop this fermentation and so explains why we can give such large quantities in the protein-milk whether we use breast or protein-milk we must give small quantities. Can give rectal instillation of warm water at the rate of 30 drops per minute by means of a small catheter. Hess has an apparatus similar to the Murphy drop for this purpose. Food is increased every day by 50 to 100 grams also the intervals increased. The carbohydrates are not increased until 1-7 of the body weight is reached in case of protein-milk feed 1-5 of the body weight. In favorable cases the toxication is reduced in two or three days. Temperature is lowered, diarrhoea is improved and a check on the loss of weight. Convalescence may be slow or interrupted by a relapse.

If the toxic condition persists we are guided by the weight. If it remains at a standstill we increase the quantity of food until one 1-10 in breast or 1-7 in protein-milk in body weight is given. If the loss of weight continues the danger from inanition is a grave one and we must increase the food. A relapse during the early stage is considered a bad one as it indicates a great reduction of the tolerance. We can hardly hope to save these cases except by the breast milk. A relapse later is generally due to rapidly increasing the food which is remedied by slowly increasing the food.

Orthopedic Surgery

BY

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Hip Disease. By John Ridlon, Penna. Med. Jour., Nov. 1914. By hip disease the author means a chronic inflammation of the hip joint that we cannot differentiate from tuberculosis.

The earliest symptom usually is a limitation of the normal movements of the hip joint, especially to be observed in hyperextension and rotation. With this or following its appearance there may be some pain in the limb and some sensitiveness. The radiogram may be of service in diagnosis, and particularly in the differential diagnosis.

Hip jiont disease may be differentiated from coxa vara, osteoarthritis, the hysterical hip, acute epiphysitis, and the tabetic hip. It must be distinguished from disease of the sacro-iliac joints, of the bones of the pelvis, and of the lumbar spine.

Hip disease will usually run a course of one to five years when treated, and much longer when untreated. In the latter cases, shortening, ankylosis, and deformity may always be expected; and any one or all of these may occur in the former. Early and efficient treatment will, however, frequently result in a practically normal hip; and any attempt to produce ankylosis in an early case of hip disease is vicious treatment, Lorenz to the contrary.

Immobilization is the most important principle of treatment during the period in which muscle spasm is present. The long spica cast from the nipples to the foot is usually the most efficient means of preventing motion in the hip joint. The short spica will not prevent flexion and adduction. The patient should be kept in bed until all pain and excessive sensitiveness have disappeared. He may then be allowed to go about with crutches and with a high shoe on the foot of the normal limb. Later the patient may be permitted to walk on both feet.

A long traction hip splint protects the joint and removes weight bearing, but it does not fix the hip nor does it produce traction when the patient is walking on the splint, and it allows the development of adduction deformity. The Bradford abduction brace has the same faults except that it can probably prevent the adduction deformity.

The general practitioner should be content with the use of the long plaster of Paris spica.

It is easier to dia nose the disease at first than to diagnose a cure at the last, as the only real test of a cure is the use of the limb without a return of symptoms.

The author is of the opinion that, "The theories of all operations on tuberculous hips have been conceived in ignorance and born in iniquity." You can't cut out tuberculosis and throw it away, and tuberculous abscesses should be left untouched.

Back Ache—Its Causes and Its Treatment. By Wm. J. Graham. The Old Dominion Journal, October 1914. The author states that there are three types of back ache; medical, mechanical, and surgical. The first occurs in the course of certain acute infectious diseases and in other medical cases, and is not here under discussion. He groups under the mechanical type scoliosis, lordosis, and flat foot; and under the surgical type Pott's disease, sacro-iliac strain, spondylitis deformans, lumbago. visceroptosis, and scorbutic spine.

Functional scoliosis and its accompanying back ache are usually cured by exercises to develop the muscles of the back and by the assumption of a proper posture. Structural scoliosis must be treated by plasterjackets and later by removable braces and by the use of exercises.

Lordosis should be treated by a properly adjusted corset or by abdominal binders.

Flatfoot may be corrected by raising the inner side of the sole and heel of the shoe and by felt instep pads or steel arch supports.

For Pott's disease the author mentions the accepted measures of treatment. The pain of sacro-illiac strain may be relieved by strapping the lower part of the back with adhesive plaster strips or by the use of a tight fitting pelvic belt. Spondylitis deformans is best treated by a long plaster jacket. Lumbago can be treated with the criss-cross adhesive strips over the lower part of the back. The use of corsets is indicated in visceroptosis. Static back requires massage, exercises, and a proper corset for its treatment. Scorbutic spine may be mistaken for Pott's disease rheumatism if the general scorbutic condition is overlooked. It is best treated by recumbency and hyperextension while the necessary attention is given to diet and hygiene.

Ankylosis: An Experimental Study. By Allison and Brooks, Sur., Gyn., and Obstet November 1914. The authors investigated by animal experimentation the tissue changes that take place in and about a joint during the process of ankylosis. Four experimental methods were employed upon the knee-joints of dogs; (1) partial excision of the joint, (2) destruction of the joint-cartilage, (3) injury to the joint-cartilage, and (4) direct infection of normal joints. The first series of cases demonstrated that bony ankylosis is present only after a long time, while fibrous ankylosis occurs early. The second series produced practically the same results as the first. The third, in which there was slight injury to the joint surfaces, presented certain acute and chronic inflammatory reactions. The fourth presented acute inflammation and destruction of the joint-cartilage.

Ankylosis, therefore, is a slowly developing process which passes through the stages of union by granulation tissue, union by dense fibrous tissue, and metaplasia of fibrous tissue into fibro-cartilage and a direct transformation by the latter into bone. Final bony ankylosis does not occur before the end of at least six months.

Regeneration of Cartilage and Bone with a Special study of these processes as they occur at the chondrocostal junction, by Hass. Surg., Gyn., and Obstet., November, 1914. The author summarizes his conclusions as follows:

The periosteum is directly and actively concerned in the regeneration of bone by proliferating to form a cartilaginous tissue, which is then transformed into bone. The exact method of this transformation is not determined, but there is possibly direct change of cartilage cell into bone cell and also bone for formation through the function of the osteoblast.

Regeneration of bone also takes place from the marrow and the cortical bone, but later and to a lesser degree than from the periosteum.

Cartilage regenerates from the perichondrium almost entirely, but slightly from the original cartilage.

The Relation of Local Infections to Joint Infections. By Ely. Cal. State Jour. of Med., November, 1914. The author refers to the recent striking work of Rosenow who obtained from acutely inflamed joints three types of micro-organisms with which he produced typical arthritis in rabbits and then obtained pure cultures from the rabbits' joints. Furthermore, he found he was able to change the three types of micro-organisms one with another and produce at will a streptococcus viridans, which showed a marked predilection for the endocardium, a streptococcus hemolyticus, which showed predilection for the joints, and a diplococcus, not to be distinguished from the pneumococcus, which produced not only an arthritis and an endocarditis but also a myocarditis and a myositis. These organisms are nonpathogenic under certain conditions but may become pathogenic under "low oxygen pressure," as in the crypts of the tonsils or in the seminal vesicles.

Many other forms of arthritis are due to a focus of infection elsewhere in the body; as in scarlet fever, typhoid fever, gonorrhea, and possibly in appendictis, cholecystitis, or lymph-adenitis. Even tuberculous arthritis is probably always secondary to a tuberculous focus elsewhere. Pneumococcic arthritis following pneumonia is well known.

The treatment of infective arthritis should always include an eradication of the original focus of infection. When this focus has been removed, the joint will often clear up of itself.

Miscellaneous Extracts

Prognosis and Diagnosis of Congenital Cardiac Disease.—Dr. Charles Hunter Dunn, of Boston in this paper dealt with special studies undertaken in Vienna in an obstetrical division of a large hospital. The study covered about forty cases. The diagnosis of these cases was difficult clinically. The text-books were misleading in treatment of the subject. His conclusions were often made in spite of the literature. Many statements made by men of high authority were not found to be justified. Several lesions together were often confused with a single lesion. In the cases studied diagnosis was confirmed at autopsy in forty; eight additional cases were found where the physical examination gave no hint of cardiac lesion, and in four cases a diagnosis was made and the autopsy showed a normal heart. Cases included open foramen ovale; pulmonary stenosis; deficient ventricular septum; patent ductus arteriosus; congenital malformation of pulmonary artery. Open foramen ovale by itself had little clinical significance. Pulmonary stenosis was the sole lesion in sixteen cases; all these babies died under three weeks and were all blue babies. Where they survived this was not the sole lesion. In all forty cases a systolic murmur was present. Enlargement was found to be an essential sign in pulmonary stenosis. Open ductus arteriosus was found to be a help when combined with pulmonary stenosis and not a hindrance to the circulation of blood from the right to the left. In these cases a murmur was always found to be transmitted to the neck. A case of murmur without cyanosis or enlargement was always open ductus arteriosus alone.

The Establishment of Lactation.—Eric Pritchard, (American Medicine, May, 1914.) believes that if one tithe of the ingenuity, which in recent years has been lavished on the artificial method, had been bestowed in studying improvements in the feeding of infants, comparatively few of the breast babies would even now, in these so-called degenerate days, be relegated to the bottle. Lactation is dependent on various conditions. The nipple must be stimulated by the suckling of the infant. The nerve centres which control the functions of secretion and the vascular supply must be in a condition of adequate excitability; and the blood itself must contain a sufficiency of the raw material out of which the mammary secretion can be elaborated. The physiological activity of the mammary glands is dependent on a complicated nervous mechanism, in which mental and psychological factors are closely concerned, in addition to the direct centripetal influences. There is a close relationship between the specific secretory functions of a gland and the vascular supply. The influence of emotions on the vasomotor functions explains secretory variations of the mammary glands. There is reason to believe that internal secretions or hormones circulating in the blood can also actuate or reinforce the activities of vasometer nerves. There are no grounds for supposing that foods or so called galactagogues can have any influence on the nervous mechanism of secretion.

Proportion of Sexes at Birth.—Biologists have studied, for many years, the question of determining sex in man and animals. In the human race they have tried to find out whether the proportion of boys to girls among the infants born would not explain, at least partially, the origin of sex. Following up this subject, Dr. A. Pinard of the obstetric clinic of the Faculte de medecine de Paris, and A. Magnan have recently furnished the Academie des Science with some interesting statistics in regard to the deliveries at the Baudelocque clinic. These statistics merit confidence as they have been kept in the most thoroughly scientific way. Each woman has a chart on which is shown, in addition to her case history, the sex, weight and measurements of her child. Taking into consideration only the living infants dismissed from the Baudelocque clinic, we find that during the period of twenty years from 1891 to 1910 inclusive, there were 42,183 deliveries. Of these, 19,122 were boys and 18,630 girls, making a proportion of 102 boys to 100 girls.

There is, therefore, an excess of male births and the same was found to be true for each one of the twenty years. But in addition to the living infants, we must consider the stillborn ones and those who die during the few days that the mother stays at the clinic. To know the exact relation of male to female conceptions, we must add to the number of living children those who die during pregnancy and labor and shortly after birth. So we will get the absolute number of boys and girls procreated, minus the embryos expelled in abortion, whose sex cannot be determined. These figures show that the excess of males over females procreated is much greater than the excess when we count only the living children. The reason for this is, as Pinard and Magnan have explained before ,The Journal, March 29, 1913, p. 1010), that the males undergo more traumatism during labor on account of their greater weight.

The International Congress on School Hygiene.—The program and arrangements have been about completed for the Fourth International Congress on School Hygiene, which is to be held in Buffalo, August 25 to 30. An energetic campaign has been conducted by the management to insure the success of the congress. Committees to promote the congress have been formed in thirty-three foreign countries and in forty-five states, and teachers, investigators, physicians, dentists, sanitarians and public spirited citizens from every quarter of the globe have manifested the greatest interest in the congress and the attendance will undoubtedly be large. Over 300 speakers have signified their intention of taking part in the program, and fifteen national associations interested in health problems have arranged special symposiums for the Buffalo meeting, one section of the congress being devoted to such symposiums. In addition to this section, there will be a section on the hygiene of school grounds, building materials, equipment and up-keep; a section on hygiene of school admistration; a section on hygienic and sanitary supervision of schools. Each of these sections will have a large number of papers covering all the features of school hygiene. Special sessions have been arranged for on such subjects as school feeding, oral hygiene, sex hygiene, mental hygiene, conservation of vision in school children, health supervision of university students, school illumination, relation between physical education and school hygiene, tuberculosis among school children, physical education, college hygiene, and mentally defective children. Each of these special sessions has had its program arranged by associations, committees and individuals working especially along particular lines. The President of the United States has been made honorary chairman of the congress and will open the session either in person or by representative. Many of the most distinguished men of all nations interested in school problems will be present at the congress.

Abundant provisions have been made by the people of Buffalo for the care and entertainment of the guests. A minor, but interesting, feature of the local arrangements is the provision for 2,000 boy scouts of all nationalities and speaking all languages to act as guides and interpreters for the visitors during the congress.

The subjects relating to the health and welfare of school children have received a tremendous amount of attention within recent years, and indeed they are among the most important of our problems concerning national welfare.

The congress at Buffalo will undoubtedly promote great practical interest in, and supply important facts concerning school hygiene to those who will use them in a practical way, and that is the prime object of the congress.

Mastitis from a Pediatric Standpoint.—R. A. Strong concludes that the breast milk of a nursing mother should be examined at regular intervals as a routine practice, especially in all cases showing a disturbance. In artificial feeding the child should be started on very low percentages and then gradually increased up to the caloric requirements. In all cases one should bear in mind the possibility of returning to breast feeding, and should use means to conserve the breast milk with this object in view. Incidentally, in order to keep up the supply of breast milk, it is absolutely necessary to empty the breasts at least twice daily. Massage has many advantages, but the massage should be gentle, on account of possible trauma and an increase of the inflammatory process. The best method of treating mastitis, according to the writer, is the use of Bier's suction apparatus, which relieves pain and hyperemia, removes the milk, and quickly softens the gland. The cup should be applied three or four times in a day for twenty to thirty minutes, allowing the air to be let in every five minutes and the suction renewed.

Uterine Hemorrhages in Young Girls.—Dr. Henry C. Coe, of New York, stated that in the absence of any discovered cause for the hemorrhage, local or general, the practitioner was thrown back upon experimental medicine, and must interrogate rigidly the ductless glands, with more or less doubtful results. Organotherapy must be regarded as the best curative agent. The prognosis must depend upon the actual or supposed cause of the condition. Care should be exercised in making caustic applications to the endometrium, which were not absolutely controllable and might cause irreparable injury to the delicate organs in subjects of tender years. One of his colleagues had met with success in the treatment of obstinate hemorrhage in young women, by ligation of the uterine arteries per vaginam, which was practically out of the question in young children. The writer could conceive of cases in which explorative abdominal section might be elected, even when pelvic examination was negative, but it would be a desperate case indeed in which both ovaries should be removed, not to speak of supravaginal amputation of the uterus.

Dr. Harvey P. Jack of Hornell, had had money cases of hemorrhage in young girls. In several repeated curettements, hygienic measures, parotid gland, and thyroids had been administered without relief. These cases seemed hardly to recover from the exhausting hemorrhage of one menstruation before another began. Thyroids in small doses, long continued, had proved of great benefit in a few, but the agent that had cured every one of these severe cases so far, and two were now under treatment was calcium chloride. One girl in particular had been brought from a bleached out nervous wreck to brilliant health by the use of this drug alone.

The Milk of Tuberculous Mothers Helps to Immunize Their Offspring.—Riviere, basing his reasoning on the part played by the milk of tuberculous mothers in immunizing their offspring, goes a step further and actually hopes the infected milk will give a child a mild bovine infection which by autovaccination will more quickly and more safely immunize it against the human bacillus later encountered, in the same way that Piorkowski tries to immunize us with a turtle vaccine artificially. Perhaps we should go on pasteurizing milk in summer to prevent other infections and give our babies raw milk in winter. If it is really true that milk from tuberculous cows is not only harmless but actually immunizing, why not pass a law that only that kind of milk shall be sold? Recent advances have certainly placed sanitarians and pediatrists in a paradoxical position. How will they wriggle out of it?—(American Medicine, March, 1914.)

Presentation of Cases of Sporadic Cretinism.—Dr. Charles Herrman of New York presented this paper before the Medical Society of the State of New York at the One Hundred and Eighth Annual Meeting, in which he gave a summary of forty-one cases of sporadic cretinism that had come under his attention during the past fifteen years. He also presented a number of illustrative cases. He stated that in this series of 41 cases, 30 were females and 11 males. A large number of the patients in this series were observed at a very early age, 16 being under two years of age and 8 of these under one year. Dr. Herrman expressed the belief that in the majority of cases the disease was congenital, because so many cases came under observation with distinct symptoms before the end of the first year, and because so many coming under observation later gave a history of having had significant symptoms since birth. He did not believe that the mother's milk contained substances which counterbalanced the deficit of thyroid in these infants, because a number of the patients showed distinct symptoms while at the breast. All cases of myxedema were not necessarily due to absence of thyroid gland. In a case in which both Hochdinger and Kassowitz had made the diagnosis of myxedema due to congenital absence of the thyroid gland as no thyroid could be felt, the patient died, and at autopsy the thyroid was found to be present, but markedly infiltrated by a growth of new connective tissue. This case also illustrated how difficult is was to palpate the thyroid gland. In this series twenty-five of the patients were Russian Hebrews. Making allowance for the fact that at a number of the clinics in which these cases were observed a large percentage of the patients were Hebrews, still the large proportion was striking. The series offered an unusual opportunity for studying the effect of long treatment, for thirteen were under observation for more than five years and of these seven were observed for from ten to eighteen years. As to consanguinity, in only four cases were the parents related, and three of these cases were in one family. A distinct history of constitutional disease in the family was not common. The Binet-Simon test was of very great value but had its limitations, being only applicable to children whose intelligence corresponded to that of a child of four years. The results obtained by this method compared with the intellectual development as shown by the patient's grading in school corresponded pretty accurately. The data presented in respect to physical development, mental development, retardation of mental and physical development, and the age at which treatment was begun seemed to justify the following conclusions: (1) Under thyroid treatment, if begun early, the physical development might reach normal. (2) When treatment was begun late the physical as well as the mental development might remain much below the normal. (3) The improvement in the mental development was never as great as in the physical development. (4) The earlier the treatment was begun the better the result as far as mental development was concerned. (5) In congenital cases, if the treatment was begun after the first year, a marked intellectual retardation persisted. The later the treatment was begun the more marked would be the retardation. (6) In order to obtain good results the treatment must be regular and continuous. A case presented well illustrated this point. While the treatment was regular the increase in height was three and one-half inches in a year, whereas during the periods when it was irregular it was as low as three-quarters of an inch in a year. (7) In the acquired as against the congenital form, the intellectual development was less retarded than the physical development.—Med. Record.

Tonsils and Adenoids in Children. T. B. Layton makes a plea for the restriction of operations in tonsilitis and adenoids in children. Because these structures are enlarged, we have no right to infer that they are the cause of the surrounding inflammation. Their enlargement may be rather a consequence of it, and we would then do better to remove the cause of the inflammation than to remove the secondarily hypertrophied lymphoid tissue. He believes that before estimating the degree of obstruction which these enlargements are causing, one should not come to a conclusion just after an acute attack, nor until all other sources of infection have been eliminated. Perhaps the commonest source of infection is carious teeth, and no operation should be considered until all such teeth have been property attended to, with complete removal of infection. After all sources of infection have been removed, several months should elapse before the question of operation is finally decided. In Layton's experience, a large proportion of children sent for operation on the tonsils and adenoids will not need such operation, if the suggestions made are adequately carried out, and if to these there are added two other measures: First, the careful and efficient training of the child to breathe properly; and second, the building up of the child's health to the maximum by means of fresh air and sufficient food. He further suggests that, if during such a course it is found that the parents or attendants of the child have shown a persistent failure to train it in proper breathing exercises, an operation will be of little benefit, because such training is an essential sequel to the operation if it is to be a success. Layton finds that dyspepsia of the second dentition is also a frequent cause of lymphatic hypertrophy; its cure usually leads to recession of the hypertrophy to such an extent that operation is no longer needed. Before operating we must have positive evidence that lymphoid hypertrophy is itself doing harm, and that it is local and not a part of a general lymphoid enlargement, and also that it is permanent, not merely being kept up by the presence of some infective cause. When enlargement is due to some infective condition, operation, however complete, will be followed by a return of hypertrophy unless the cause is removed. He is unable to see any necessary connection between enlargement of the tonsils and adenoids in children and the occurrence of chorea or rheumatism, and he has not found that removal of the tonsils and adenoids has lessened the frequency of these conditions. Lastly, he cites evidence for the statement that tonsillar or adenoid removal is fraught with very considerable danger, even when performed under the most ideal conditions.

Studies on the Incubation Period. No. 1. Serum Disease. By David Murray Cowie (Amer. Jour. of Dis. of Child., April, 1914). Cowie carefully reviews our present knowledge of the condition which is known as "serum disease." Von Pirquet and Schick, working independently of each other, were the first to arrive at a composite picture, because they recognized the irregularity of the incubation period which occurs between the injection and the appearance of the clinical symptoms. They observed that when the cutaneous manifestations showed themselves early, within one to three days, they did so only in individuals who had at some previous time received an injection of horse serum. Von Pirquet noted that after the first injection the incubation period was seven days, and that after the second injection the reaction followed at once. The next question which naturally arose was as to why every person did not show symptoms of "serum sickness" after an injection of horse serum. The answer is that in the first instance it is a quantitative affair. A very large dose produces symptoms, a small one does not. A further observation that has been frequently made is that in one person a large dose does not cause visible symptoms, while in another person of equal weight and of apparently the same constitution the same dose brings about visible symptoms. The reason for this has been explained on grounds of individuals with blood and showing no clots. The day after pressure had fallen to 220 mm. The patient made a complete recovery.

Splenomegaly with Recurrent Jaundice ending in Hepatic Cirrhosis and Acites, with Remarks on the Splenomegaly of Inherited Syphilis in Children. By Dr. F. P. Weber (British Journal of Children's Diseases, March, 1911). The author presents a case of splenomegaly in a girl 12 years of age. She was rather delicate. Showed a moderate amount of jaundice, during the last three months of life. The feces were sometimes of a good color and sometimes pale. The urine gave a faint reaction for bile pigment. For at least six years the spleen was palpable three fingers' breadth below the costal margin. The liver was apparently not enlarged, though it could occasionally be felt below the costal margin. Except a suggestive family history there was nothing to suggest syphilis. There was nothing abnormal in the blood picture.

Six years previous to her final illness there were two attacks of jaundice, from which she promptly recovered. The size of the spleen remained unchanged in spite of treatment with mercury and the iodides. Five years after these attacks she again developed jaundice. Soon after this acites appeared and a rapidly progressing cachexia set in. She became progressively anemic, and finally died, three months after the onset of ascites.

The necropsy examination showed a liver weighing 26 oz., contracted and hob-nail in appearance. On microscopic examination a medium degree of multiobular cirrhosis was found. The spleen was large (33 oz.), and microscopic examination showed the presence of an extraordinary amount of chronic fibrosis.

The author's review of the case and the literature may be summarized as follows:

1. The splenomegaly of inherited syphilis is often accompanied by occasional attacks of obstructive jaundice.

2. Moderate splenomegaly in children about the ages of 5 to 16 years may be almost the only evidence of inherited syphilis.

3. Hepatic cirrhosis, with or without acites, may be associated with splenomegaly.

4. It is doubtful whether the cirrhosis of the liver in these cases is of specific origin, but there may be diminished resistance of the liver, because of the syphilitic taint, towards the action of toxins.

5. Inherited syphilis in these cases may be associated with some degree of retardation in general physical development.

6. In these cases caution must be employed with regard to antisyphilitic treatment, on account of the general delicacy of the patients and their liability to renal and catarrhal complications.

7. In these cases there is little real anemia.

8. Other unknown (toxemia?) conditions may cause splenomegaly and recurrent jaundice in children.

9. Cases of "familial" splenomegaly occurring in two or more members of a family may occasioually be connected with an inherited syphilitic taint, but familial splenomegaly is better recognized in connection with congenital chronic acholuric ("hemolytic") jaundice, and with primary splenomegaly of the "Guncha type."

10. Splenomegaly in children may be the most important sign of the presence of hepatic cirrhosis, when the former is either secondary to, or due to the same cause as, the latter.

11. Some cases of splenomegaly in children with inherited syphilis ultimately present the characteristic clinical features of splenic anemia or Banti's disease.

BOOK REVIEWS

The Salvarsan Treatment of Syphilis in Private Practice, with some account of the modern methods of diagnosis, by George Stopford-Taylor, M.D., M.R.C.S., and Robert William Mackenna, M.A., M.D., B.Ch., physicians to the Liverpool Skin Hospital. Cloth bindings, price $1.50. New York, Rebman Company, Publishers, Herald Square Building, 141-145 West 36th Street.

The authors of this timely work record their impressions and conclusions covering three years' experience with Salvarsan in the treatment of Syphilis. All the work upon which these conclusions were based were upon cases seen in private practice. They were able to control their patients and after-histories which enabled them to follow their treatment to a conclusion.

We believe that anyone who reads the work will be convinced of the immense benefit conferred on the human race by Ehrlich's great discovery and its unique efficacy in controlling one of the most horrible devastating plagues that ever ravaged the human race.

The Backward Baby. A Treatise on Idiocy and the Allied Mental Deficiencies in Infancy and Early Childhood. By Herman B. Sheffield, M.D., New York; Fellow of the New York Academy of Medicine and the Am. Med. Ass'n; author of Modern Diagnosis and Treatment of Diseases of Children, Pediatric Memoranda, and the Baby's Record and Health, and co-author of Practical Pediatrics. Price $1.00. New York, Rebman Company, Publishers, Herald Square Building, 141-145 West 36th Street.

This brochure, entitled "The Backward Baby" received the Alvarenga prize of the College of Physicians of Philadelphia, awarded July 14, 1914. The author's aim in the preparation of this little book has been to present to the profession a practical survey of etiology, pathology, diagnosis and treatment of the diverse mental deficiencies as they occur in children under five years of age. The usual works of this subject heretofore have been devoted to the study of feeblemindedness in children of school age and adults. The contents of this work are mainly the personal observations of the author which he hopes will receive gracious consideration at the hands of more experienced clinicians.

The reviewer is very much impressed with the work and recommends it to every physician whose labor includes the treatment of mental defiency in infancy.

The Pocket Formulary for the Treatment of Disease in Children. By Ludwig Freyberger, J.P., M.D. Vienna, M.R.C.P. Lond., M.R.C.S. Eng., Barrister-at-Law, Toxicologist and Pathologist. Fourth, revised and enlarged edition. Adapted to the British Pharmacopoeia. With an appendix on poisons, their symptoms and treatment. Limp leather bindings, price $2.00. New York, Rebman Company, Publishers, Herald Square Building, 141-145 West 36th Street.

The object of this little book is to give the busy practitioner and senior medical student in a concise and handy form all the information which may be required as regards the treatment of diseases of children by drugs. The scope of drugs and therapeutic remedies covered by this little book are arranged in alphabetical order. The descriptive matter gives successively a brief account of their properties, uses, therapeutic action, incompatibilities, dose, their synergists and antidotes. Marginal references in italics enable the paragraph containing the desired information to be found at a glance. The officiaal preparations are printed in large bold faced type.

The drugs and combinations with which the author has had personal and satisfactory experience are marked "useful" or "very useful," and those, the usefulness of which the author has had to rely on the experience of other physicians are marked "recommended."

Proprietary medicines have been excluded. The therapeutic index contains in alphabetical order the names of the more common diseases of childhood and the drugs which are best suited for their treatment. This is a very handy little book and ought to have a large field of usefulness.

With Sabre and Scalpel. the autobiography of a soldier and surgeon. By John Allen Wyth. M.D., LL.D. Octavo plain buckram, price $3.00. Harper & Bros., publishers, New York and London, MCMXIV.

Part One of this book contains: Pioneer life in the "Cherokee Country" in the Tennessee Valley of Northern Alabama. Huntsville and the Aristocracy of the Old South Plantation Life and the Negro in Slavery. The "Poor Whites" "uneducated but not ignorant." Slavery in America and the strength of the Emancipation Movement among Slaveholders. James G. Birney, of Huntsville, first candidate for the Presidency of the Abolition party. Eight Emancipation Societies in the Tennessee Valley—from 1830 to 1840. Virginia liberated approximately $100,000,000 worth of slaves without one cent of remuneration. A clear analysis of the fanatical crusade against the South, which culminating in the treasonable and murderous Harper's Ferry invasion, with the possibilities of inciting a servile insurrection and repeating on a vast scale the Southampton Massacre of women and children, led to secession and civil war.

The plain truth about John Brown and his co-conspirators in this nefarious plot. The attempt to make a martyr and a national hero of a man who is shown to have stolen money intrusted to his care which was never repaid: who robbed and murdered defenseless settlers in Kansas and Missouri, appropriating the proceeds of property thus unlawfully acquired to his personal use: who under various assumed names was a fugitive from justice with a reward out for his apprehension by the United States Government and from the State of Missouri, and who was denounced publicly for his many crimes against law and humanity by such eminent and honorable men as Eli Thayer and Amos Lawrence, of the New England Emigrant Aid Society

This book is unique in a way recording the personal observations of the author giving an insight into the social, economic and political conditions which prevailed before, during, and immediately after the Civil War. The author recounts the interesting events of his stirring life from infancy, in a remote corner of Alabama in 1845, among the forests in which the Redman still lurked, to his position today in the foremost rank of active American surgeons.

The author's life has been a varied one, beginning with a farmer woodsman, Confederate soldier, cotton planter, cattle buyer, medical student, river pilot, building contractor, land speculator, telegraph operator to a physician and surgeon.

The author's pictures of social life on the plantation are valuable contributions to history. His reminiscence of history anecdote,are interesting and entertaining. He depicts the biography of men great and famous during the period of time covered by this work.

In Part II, the author tells the reader of his work as a surgeon and teacher, referring to some of his original contributions to surgery. It was due to Dr. Wyeth's efforts that the first systematized postgraduate medical school was founded in America. The great Polyclinic is the child of his efforts. The book supplies most interesting reading to any physician, and the book would make an appreciable Christmas gift to a Medical friend. The illustrations are interesting and add much to the value of the work.

VOLUME XXVI, 1914

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VOL. XXVI, 1914

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EDITORIALS

Diabetes in Children 1
Prevention of Diphtheria in Children 2
Chronic Intestinal Stasis 4
Gastro-Intestinal Hemorrhage in the New Born 65
Dancing Disease 66
The Duty of Physicians Versus the Modern Dance 67
Alcoholism in Nursing Mothers.. 69
Poliomyelitis 70
Rheumatic Heart Disease in Children 113
Hereditary Morphinism in an Infant. 114
The Value of Fruit Juices for Children 115
New York Milk Committee Saves Infant Lives 116
The Ventilation of Rooms and School Rooms 165
Improved Method of Vaccination 166
Medication by Rectum in Children 168
Enlargement of the Axillary Glands Symptomatic of Acute Purulent Pleurisy. 169
Faults and Fallacies in Infant Feeding. 221
Infant Feeding 223
Dried Milk as a Food for Infants 226

VOL. XXVI, 1914

Why Women Should Suckle Their Offspring. 227
A New Bichloride of Mercury Tablet 283
Heat and Infant Mortality 285
The Question of Pasteurized Milk 286
The Acute Dyspepsia of Infancy 288
Intestinal Disturbances in Infants 569
The Treatment of Early Tuberculosis by Intensive Nascent-Iodine Administration 350
The Cow as an Agent of Diphtheria Infection 352
The Cost of Child Labor...... 353
The Physician's Duty in Directing the Diet of Breast and Bottle Fed Infants 413
Hot House Children 415
Gonorrhœa in Girls 415
Faith Cure 417
Headache in Children 477
The Hard Lot of the First-born 478
"Twlight Sleep" 479
Intestinal Diturbances in Infants 569
Spirochaeta Pallida Once More.. 570
The Close of Another Volume .. 627
The Anemias of Infancy 628
Treatment of Constipation in Infants 629

ORIGINAL ARTICLES

Infantile and Juvenile Diabetes, By Louis Fischer, M.D., N. Y. C. 1
Ante-natal Hygiene, by J. W. Ballantyne, M.D., F.R.C.P.E., Edin. 13
Ante-natal Hygiene: Relation of the Hospital to the Hygiene of Pregnancy, by James Lincoln Huntington, M.D., Boston, Mass. 19
Infantile Menstruation, by C. C. Mapes, Louisville, Ky........ 24
Diphtheria, A Rational Consideration, by Louis Weiss, M.D., Newark, N. J............... 30
Traumatic Injury of the Knee, A Clinical Report, by A. D. Wilmot, A.M., M.D., Louisville, Ky. 71
Municipalities and Infant Life, by Richard Caton, M.D., L.L.D., London, England 75
Infant Mortality: What is Our Responsibility? by Henry Enos Tuley, M.D., Louisville, Ky... 81
The Effects of Criminal Abortion, by Louis Frank, M.D., Louisville, Ky. 86
Treatment of Acute-Tonsilitis in Children, by J. Epstein, M.D., Brooklyn, N. Y. 89
Genu Valgum, by C. B. Spalding, M.D., Louisville, Ky. 120
Heart Massage as an Aid to Resuscitation of Stillborn Infants, by Robt. E. LaRue, Erie, Ill... 126
The Organization of Infant Mortality Work in Cleveland, showing the relation between a Municipality, a Babies' Dispensary and a University, by Dr. H. J. Gerstenberger, Cleveland, Ohio. 129
Congenital Inguinal Hernia—Suppression of Urine, by C. B. Spalding, M.D., Louisville, Ky. 140
Toxemias of pregnancy and their effects upon material and infantile mortality, with suggestions as to how the association and the public health department might assist obstetricians in lessening the death-rate from these and other complications of pregnancy and parturition, by J. M. Munro Kerr, M.D., Glasgow, Scotland 170
The necessity for special education in infant hygiene, with particular reference to the medical profession, by Linneus Edford LaFetra, A.B., M.D., of New York 178
The necessity for special education in infant hygiene, by C. Paget Lapage, M.D., M.R.C.P., Manchester, England 183
The Federal children's bureau of the United States of America, some aspects of its present work, by Miss Julia C. Lathrop 187

VOL. XXVI, 1914

On the fundamental mechanisms of the activity of the cerebral cortex in children, by M. Kransnogorski, St. Petersburg 194
Milk in the Poor Home, by Dr. G. R. Pisek, New York City. . 229
The Administrative Control of the Milk Supply, by William G. Savage, M.D., Lond 234
The Control of the Milk Supply from the Point of View of the Veterinary Inspector, by J. W. Brittlebank, M.R.C.V., D.V.S.M., Liverpool 240
The Use of Dried Milk, by A. E. Naish, M.A., M.B., Cantab. M.R.C.P., Lond 247
A Simple Substitute for "Eiweissmilch," by Prof D. R. Stoeltzner, Director, Children's Polyclinic and the Infants' Clinic of the University of Halle a-S., Germany 251
The Prevention of Tuberculosis in Children, by Hans Karfunkle, M.D., Berlin, Germany. 291
Dried Milk in Infant Feeding, by Eric Pritchard, M.A., M.D., M.R.C.P. 300
Conversatism in Pelvic Surgery: Report of a Case, by John W. Price, Jr., M.D., Louisville, Ky. 306
Overmedication, by J. Epstein, M.D., New York City. 310
Infections of the Urinary Tract in Infants, by Walter R. Ramsey, M.D., St. Paul, Minn. . . . 355
"Hookworm Disease," by L. Emmett Mock, M.D., St. John, Kan. 362
Clinical Observations on the Medical Inpection of Schools, by J. W. Torbett, B.S., M.D., Marlin, Texas 372
Constitutional Psychopathy in Children, by James C. Hassall, M.D., Washington, D. C. 376
The Teaching of Infant Care and Management to Girls in Public Elementary Schools, by Miss Janet Campbell, M.D., M.S., Liverpool, England 418
Scurvy, by Alfred C. Wallin, M.D., New York City. 424
The Protection of Infants Against Tuberculosis Infection, by Clive Riviere, M.D., F.R.C.P., Paris, France 437
The Treatment of Pertussis, by Sidney J. Meyers, M.D., Louisville, Ky. 445
Acute Infantile Intestinal Infection, by Dr. Alfred C. Wallin, New York City 481
The Effect of Income on Nursing Capacity and infant Growth, by H. W. Pooler, M.B., Ch.B., Liverpool 490
Eugenics—In Extensio, by Dr. U. S. Bird, Tampa, Fla. 501
Indications and Contra-Indications for Removal of Tonsils, by W. T. McCurry, Little Rock, Ark. 502
Glandular Tuberculosis, by Alfred C. Wallin, M.D., New York. . . 573
Nursing Management of Breast Fed Infants, by Charles White Berry, M.D., Brooklyn, New York City 583
Appendicitis in Early Childhood, by John B. Manning, M.D., Seattle, Washington 592
Whooping Cough. Its Dangers at last Recognized, by Samuel A. Visanska, Ph.G., M.D., Atlanta. Ga. 599
Spasmophillia, by C. G. Leo-Wolf, M.D., Buffalo, N. Y. 631
The Aims, Objects and Methods of Sterilization of Milk, by Dr. E. W. Hope, M.D., D. Sc., Liverpool 640
The Conservation of Child Life, by Martin J. Synnott, A.M., M.D., Montclair, N. J. 648
Hyperpyrexia Following Slight Abrasion, by Irwin Lindenberger, M.D., Louisville, Ky. . 662

VOL. XXVI, 1914

SOCIETY TRANSACTIONS

A Typical Infantile Paralysis.. 42
The Year's Progress in Poliomyelitis Research 43
Results of the Investigations of Summer Diarrhea at the Boston Floating Hospital........... 45
Registration of Infants Dying Under One Year of Age Recommended in New York........ 48
Essentials of Modern Artificial Feeding in Infants.......... 48
Report of the Milk Commission.. 49
Cerebrospinal Meningitis With Special Reference to Certain Signs of Measures 91
Acute Nephritis in Children, With.. Special Reference to Etiology and Treatment 92
The Importance of Pediatrics as a Special Study............. 92
The Importance of Regulated Rest and Play to School Children. 93
Medical Inspection of the Children in Rural Schools......... 93
Milk and its Relation to Infant Mortality 94
The Management of Carbohydrates in Infant Feeding..... 95
The Education of Crippled Children 142
Industrial Training for Cripples 145
Presentation of Patients....... 256
Transfixation Method of treatment of Fractured Femur in Children 256
Guaiacol Poisoning by Absorption With Report of a Case. Discussion 257
The Peril of Delay in the Diagnosis and Treatment of Intussusception in Infancy 259
The Prevention of Gross Deformities in Pott's Disease... 264
Discussion on Dr. Moorhead's and Dr. Robert' Papers.......... 265
Sclera with Fragility of Bones.. 313
The Etiology of Pertussis...... 314
Whooping Cough 317
The Clinical and Sociological Aspects of Whooping Cough..... 319
The Treatment of Pertussis..... 321
The Need of Hospitals for ..Whooping Cough in New York .. City 325
Mortality of Whooping Cough... 328
Hypertrophic Stenosis of the Pylorus in Infancy 385
Congenital Hypertrophy of the Left Half of the Face in a Boy Seven and One-Half Years of Age 386
Roentgen Ray as a Diagnostic Help to the Pediatrist....... 387
An Application of the Roentgen Ray to Infant Feeding....... 389
The Roentgen Ray and Pneumonia 393
Miliary Tuberculosis of the Lungs 395
Roentgenograms Illustrating Birth Fractures and Atresia of the Asophagus 395
Thymus Obstruction 396
Types of Infant Stomach 396
The General Considerations of Empyema of the Nasal Accessories Sinuses in Children Under Fourteen Years of Age.... 458
The Pathology of Acute Sinusitis in Children Under Fourteen Years of Age 458
Surgical Treatment of Empyema of the Nasal Accessory Sinuses in Children Under Fourteen Years of Age 459
Endonasal Operation in Tumor of the Hypophysis 506
Pyloric Spasm 605
Congenial Hpertrophy of the Left Half of the Face in a Boy Seven and One-Half Years of Age 606
The Roentgen Ray as a Diagnostic Help to the Pediatrist.. 607
The Roentgen Ray and Pneunonia 610
An Application of the Rogentgen Ray of Infant Feeding....... 608
Roentgen Illustrations of Birth Fractures and Atresia of the Esophagus 611
Thymus Obstruction 612
Types of Infant Stomach 612

VOL. XXVI, 1914

RETROSPECT OF CURRENT PEDIATRIC LITERATURE

Treatment of Enteritis in Infants 51
Duodenal Ulcer in Children..... 51
Development of Artificially Fed Infants 52
Influence of Summer Heat on Infant Mortality 52
Vulvovaginitis in Young Children 52
The Protection of Children 53
Rest in Tuberculosis 54
Tuberculosis of the Larynx in Children 55
The Operative Treatment of Hallux Valgus and Bunion...... 55
Arthritis Deformans of the Spine Differs in no Essential Features from the Same Disease of Other Joints 56
Orthopedic Treatment of Spinal Poliomyelitis 56
Acute Poliomyelitis in California 57
Causes of Continued Fever in Children 58
Prophylaxis of Diphtheria 58
Iodin in Prophylaxis of Diphtheria 58
Infant Mortality 59
Surgical Scarlet Fever 60
Appendicitis in Children 60
Operation for Intussusception Complicated by Measles and Bronchopneumonia 60
Pyloric Stenosis in Infancy: An Analysis of Twenty Cases Personally Operated upon 61
Acute Irreducible Intussusception in a Child Aged Six Months, Resection, Recovery 97
Note of a Case of Amoebic Dysentery of Three and a half Years Duration Rapidly Cured by Injections of Emetine Hydrochloride 98
Reports in the Australian Medical Gazette, A Case in Which Round Worms Caused Symptoms Leading to a Diagnosis of Appendicitis 98
Chronic Intestinal Stasis 99
Implantation of Joints 100
Flat-feet and What They Lead To 101
Heliotherapy, with Special Reference to the Work of Dr. Loller at Leysin 101
Early Symptoms of Poliomyelitis with Special Reference to a New Preparalytic Symptoms.. 102
Vicious Union in the Neighborhood of Joints 103
Portals of Tuberculous Infection in Children in the First Year of Life. 103
The Initial Localization of Pulmonary Tuberculosis in the Child 103
Should Tuberculous Mothers Suckle Their Children? 104
Physical Condition of Retarded School Children 104
The Intestine as a Pathway of Tuberculous Infection 104
Open-air School for Tuberculous Children 105
Diphtheria Carriers 105
Tuberculosis Acquired Through Ritual Circumcision 105
Serum and Vaccine Therapy and Their Application to Diseases of Children 106
Scorbutus in Young Children ... 107
Diabetes in Early Infancy 107
Caustic Effect of Silver Used as a Propylactic 108
Exaggerated Fear of Anaphylaxis in Serotherapy 108
Tetanus Neonatorum with Recovery 108
A note on the Occurrence of the Colon Bacillus in the Blood.. 148
The Relation of the Gastric Secretion to Rheumatoid Arthritis 149
Alimentary Toxemia 150
Treatment of Erysipelas in Children 151
Tracheal Obstruction Due to Thymas 152
Serum and Vaccine Therapy and Their Application to Diseases in Children 152
The Treatment of Persistent Diphtheria Infection by Endotoxin 153
Pyloric Stenosis in Infants ... 156

VOL. XXVI, 1914

Congenital Atresia of the Esophagus; An Operation Designed For Its Cure 157
Ulcer of the Stomach in Children Before Puberty 157
Appendicitis with Localized Abscess 158
Hydrocephalus Internus, Lumbar Drainage by Utilization of a Meningocele Sac as a Drainage Tube 158
Causes of Disappointment Following Removal of Tonsils and Adenoid 159
Primary Epithelioma of the Nipple in a Girl Aged Eleven ... 159
Initial Localization of Pulmonary Tuberculosis in Children 153
Hot Baths in the Treatment of Bronchitis and Pneumonia in Young Children 154
Treatment of Diphtheria Stenosis of the Larynx 155
Operative Treatment of Pleural Empyema in Children 155
Pertussis and its Treatment 155
Congenital Dislocation of the Hip, a Rational Method of Treatment 160
Simple, Spinal Curvature, its Treatment and Cure 161
The Inlay Bone Graft, as a Treatment of Ununited Fractures, a Report of Fifteen Successful Cases. 161
Serotherapy 196
Recalcification 197
Some new ideas in the Therapeutics of Infantile Obesity and the Adipose Genital Syndrome by Mouriquand 199
The Modification of Milk by the use of an excess of sugar and its application in Infantile Dyspepsia, by Variot & LaVaille (Soc. De Pediatrie) 200
A Case of Arthrepsia due to Defective Alimentation, by Mr. Variott (La Clinique Infantile, Nov. 15, 1913 201
Infantile, Therapeutics-treatment of Pertussis by Iodine 201
Epilepsy and late hereditary cerebral Syphilis Cured by Iodotherapy, by Dr. Paul Boncour, Chief Physician to the Institute Medico Pedagogique 202
Serotherapy in Meningitis 206
Scarlet Fever 206
Otitis Media in Infants 207
Chronic Otitis Media 207
Contagiousness of Infectious Diseases 207
Diphtheria Bacillus and Scarlatinal Infection 208
Diphtheria 208
Scarlatinal Heart and Kidney Complications 209
Diphtheria Bacilli—Carriers.... 209
Fatal Illness in Children Associated with Acute Interstitial Parotitis 209
The Management of Acute Bronchitis in Children 210
Partial Chronic Odrenal Insufficiency in Children 210
Initial Localization of Pulmonary Tuberculosis in Children..... 210
Diagnosis of Tuberculosis in Young Children 211
Acute Primary Diphtheria Pneumonia 212
Diarrhea Due to Carbohydrate Indigestion 212
Serum Sickness 212
Summer Diarrhea of Infants.... 213
Measured Feeding for Older Children 213
Tuberculosis Following Typhoid Fever 213
Periodic Spasm of the Descending Colon in Children 214
Principles of the Treatment of Infantile Paralysis 215
The Function of the Periosteum in Bone Transplants, based on Four Human Transplantations Without Periosteum, and Some Animal Experiments 215
The Treatment of Flatfoot 216
Madelung's Deformity 216
Paralyte Toe-drop, Putti's Operation for Its Relief 216
An Experiment in Collecting Human Milk for Hospital and Dispensary Use 267
A Simple Method for Making Casein Milk 267
An Experiment in Milk Stations 267
Two Year's Observation of Milk Station Infants 268
Clinical History of Scarlatina of Wounds 271
Meningitis following Tonsilitis. 272
Reinfection with Diphtheria 272

VOL. XXVI 1914

Diphtheria Antitoxin Human Blood 272
Two Cured Cases of Tuberculous Meningitis 272
Syphilis and Fever 273
Arthritis Deformans 273
Infantile Paralysis-(Causes and Treatment of Deformity...... 273
The Treatment of Scoliosis 274
Recumbency in the Treatment of Pott's Disease 274
Chronic Arthritis 274
Subcutaneous Tuberculosis Following Circumcision 275
Appendicitis in Children 275
The Responsibility of the Tonsil in Tuberculous Adenitis...... 276
Surgical Treatment of Brachial Birth Palsy (Erb's Type).... 277
Safety Lessons for Children..... 277
Acute Acid Intoxication in Children 332
Influence of Atmospheric Conditions on Mortality of Infants with Gastro Intestinal Disorders 333
Summer Diarrheas in Children... 333
Measured Feeding For Older Children 333
Food Requirements of Infants.. 334
"Why Modified Milk" in Infant Feeding 334
Neurotic Vomiting in an Infant 335
Stomachaches Associated with General Infections in Childhood 335
The Control of Whooping Cough 335
When is the Diagnosis of Tuberculosis in Children Justified?.. 336
Scarlatina Treated with Vaccines and the Method of Milne ... 336
The Prophylaxis of Measles 337
Internal Pachymeningitis in Young Children 337
Tuberculosis of the Pulmonary Lymph Nodes and Spine Mistaken for Croup 338
Pyloric Stenosis in Infants..... 338
Fracture of the Pelvis in a Child 339
Tonsillectomy in Children...... 340
Technique for Tonsillectomy.... 340
A New Treatment of Poliomyelitis 341
Scoliosis by Malformation of the Fifth Lumbar Vertebra 341
Spinal Changes in Pseudohypertrophic Paralysis 341
The Treatment of Congenital Club Foot 342
Treatment of Curvature of the Spine 342
Concerning Ununited Fractures 343
Massage and Movements for Certain Affections of Muscle and Ligaments 343
A Contribution to the Study of Infantile Acromegaly 343
Amebic Dysentery in Children .. 398
Experiments with Swine Fat in Infant Feeding 398
The Absorption of Fat from the Intestinal Tract of the Actively Tuberculous Child......... 398
Further Observations Concerning the Relation of Heat to Infant Mortality 399
The Metabolism of Carbohydrates with Special Reference to Its Effects on the Absorption of Fat and Nitrogen and on the Retention of Salts 399
The Use of Boiled Milk in Infant Feeding 399
Experience with Whey-Modified Milk in Infant Feeding...... 400
The influence of Starch on Infant Digestion 400
Parental Protein Digestion...... 400
Care of Delicate and Premature Children in the Home........ 401
Open-Air Schools 401
The Relation of Bovine Tuberculosis to Early Tuberculosis in Children 401
School Spread of Contagious Diseases and How to Control It.. 402
Provisions of the Model State Law for the Notification of Controllable Diseases 402
Treatment of Diphtheria Bacillus Carriers 402
Outdoor Treatment of Surgical Tuberculosis 402
Diphtheria Bacilli in Chronic Carriers 402
Smallpox in Infants and Children 403
Nervous Complications of Varicella 403
Statistics of Tuberculosis in Children 403
Report of Seventeen Cases of Pyloric Stenosis in Infants Treated by Gastroenterostomy 405
Some Medical Aspects of Pyloric Stenosis in Infancy 404

VOL. XXVI, 1914

Transfixation Method of Treatment of Fractured Femur in Children 407
The Peril of Delay in the Diagnosis and Treatment of Intussusception in Infancy........ 407
Original Uses of the Bone-Graft 470
Chemical and Experimental Results of Streptococic Infections 470
Present Status of Joint Diseases and Best Method of Treatment 471
Treatment of Lateral Curvature of the Spine 471
Etiology of the Infectious Diseases 472
Dispensing with Isolation in Scarlet Fever and Measles.... 472
Protection of the Infant Against Tuberculosis 473
Serum Treatment of Gonorrheal Opthalmia in the New-born... 473
Contagion of Scarlet Fever after return from Hospital......... 473
Treatment of Eczema of Nurslings with Pellidol Ointment... 474
Acute Noncalculous Cholecystitis in a Child 474
Enuresis—Nocturnal 474
Acute Non-Cholecystitis in a Child 475
Treatment of Gonorrheal Vulvovaginitis in Children 475
Treatment of Summer Diarrheas of Children 511
Thymol as a Teniafuge 511
Typhoid and Parathyphoid Vaccination with Live Attenuated Vaccines: Mixed Vaccines.... 512
Emetine Treatment of Dysentery in Young Children 513
Respiratory Infections in Infant's Wards 513
Recurrent Bronchitis in Children 513
Papillomata of the Larynx in Children. Papillome in Larynx der Kinder 514
Infant Feeding with Undiluted Cow's Milk 515
Certain Neglected Aspects of the Problem of Infant Mortality.. 516
Recent Work on Children's Diseases 516
Some Observations on Infant Feeding 516
One Hundred and Forty-one Cases of Recurrent Vomiting in Private Practice 614
Chronic Recurrent Diarrhoea in Childhood 615
Cause of Acute Anterior Poliomyelitis 616
Infection of Children with Bovine Tubercle Bacillus 616
Cerebrospinal Meningitis 617
Infantile Paralysis or Anterior Polioencephalitis 617
Sacro-Iliac Displacement, by Jas. K. Young 618
The Intimate Relation of Orthopedic Surgery to Neurology.. 619
Internal Derangements of the Knee 619
Treatment of Harelip and Cleft Palate 621
Pyloric Obstruction in Infants... 621
Idiosyncrasy to Cows' Milk in Early Infancy 622
The Caloric Value of the Diets of Sick Infants 623
The Feeding of Mal-Nourished Infants with High Proteins and Carbohydrates and Very Low Fat Values 623
The Good Results or Low Fats and High Proteids in Cases of Artificial Feeding in Infants.. 623
Sodium Citrate as a Preventive of Milk Coagulation 624
The Wet Nurse in Hospital Practice 664
Infantile Sensitization to Egg Albumin 664
Nutritional Disturbances of Infancy 665
Hip Disease 669
Backache—Its Causes and Its Treatment 670
Ankylosis: An Experimental Study 671
Regeneration of Cartiage and Bone 671
Prognosis and Diagnosis of Congenital Cardiac Disease 672
The Establishment of Lactation. 672
Proportion of Sexes at Birth... 672
The International Congress on School Hygiene 673
Presentation of Cases of Sporadic Cretinism 674
Tonsils and Adenoids in Children 675
Studies on the Incubation Period. No. 1. Serum Disease 676
Splenomegaly and Recurrent Jaundice ending in Hepatic Cirrhosis and Acites, with remarks on the Splenomegaly of Inherited Syphilis in Children. 676

VOL. XXVI, 1914

BOOK REVIEWS

Genito-Urinary Diseases and Syphilis, by Edgar G. Ballenger, M.D., ... 63
The Medical and Sanitary Inspection of Schools, by S. W. Newmayer 63
Causes and Cure of Crime, by Thomas Speed Mosby 64
Therapeutics Materia Medica and Pharmacy, by Sam'l O. L. Potter, A.M., M.D., M.R.C.P., London, England 109
The Practice of Medicine, by James Tyson, M.D., LL. D., and M. Howard Fussell, M.D. 110
History of Medicine, with Medical Chronology, Bibliographic Data and Test Questions, by Fielding H. Garrison, A.D., M.D. 111
Therapeutics of the Gastro-Intestinal Tract, by Dr. Carl Wegele, Maurice H. Gross, M.D., and I. W. Held, M.D......... 111
Chirurgie Infantile, by Professor Auguste Broca, Paris........ 112
Some Neglected History of North Carolina, by Wm. Edward Fitch, M.D., New York 162
Diagnostic Methods, by Herbert Thomas Brooks, A.B., M.D., Memphis, Tennessee 163
Surgical Diseases of Children, by Samuel W. Kelley, M.D., Cleveland, Ohio 163
Pyorrhea Alveolaris, by Frederick Hecker, B.Sc., D.D.S., A.M., M.D. 164
Geriatrics, by I. L. Nascher, M.D., New York 217
The New Pocket Medical Formulary, by Wm. Edward Fitch, M.D. 218
Practical Sanitation, by Fletcher Gardner, M.D., Indiana 218
L'enfant et son Medecin, by Dr. Albert B. Ball, Paris 219
The Practice of Pediatrics, by Charles Gilmore Kerley, M.D., New York 219
Marriage and Genetics, by Charles A. L. Reed, M.D., F.C.S., Cincinnati, O 278
The Practitioners Encyclopedia of Medicine and Surgery, by J. Keough Murphy, M. C., (Cantab.) F.A.C.S., London 278
Tuberculin Treatment, by Clive Riviere, M.D., F.R.C.P., Lond. 279
Diseases of the Nervous System, by Alfred Gordon, A.M., M.D., Phila., Pa. 280
Stammering and Cognate Defects of Speech, by S. C. Bluemel.. 281
The Treatment of Diseases, by Reynold Webb Wilcox, M.A., M.D., LL.D., New York..... 345
Infant Feeding, by Clifford G. Grule, A.M., M.D. 345
Puericulture et Pouponniere Par le Dr. R. Raimoindi, Libraire 346
Diseases of Children, by John McCaw, M.D., R.I.U., L.R.C.P. 346
Treatment of Tuberculosis, by Albert Robin, M.D. 347
Heart Disease Blood-Pressure and the Nauheim Treatment, by Louis Faugeres Bishop, A.M., M.D. 348
Practical Pediatrics, by James Herbert McKee, M.D., and Wm. H. Wells, M.D., Philadelphia, Pa. 409
Practical Therapeutics, by Daniel M. Hoyt, M.D., Philadelphia.. 410
Ten Sex Talks to Boys, by Irving David Steinhardt, M.D., N.Y 410
Ten Sex Talks to Girls, 14 Years and Older, by Irving David Steinhardt, M.D., New York.. 411
Dysenteries, Their Differentiation and Treatment, by Leonard Rogers, M.D., F.R.C.P., B.B., F.R.C.S., C.I.E., I.M.S., London, E. S. 411
Treatment of Chronic Leg Ulcers, by Edward Adams, M.D., N.Y. 411
The Faeces of Children and Adults, Their Examination and Diagnostic Significance with Indications for Treatment, by P. J. Cammidge, M.D., London, E. C. 476
Materia Medica for Nurses, by A. S. Blumgarten, N. Y...... 476
A Treatise on Clinical Medicine, by William Hanna Thompson, M.D., L.L.D., New York City 519
Der Salvarsantod, by Carl Schindler, Berlin 519
A Manual of Infantile Paralysis, by Henry W. Frauenthal, A. C., M.D., New York 520

The Diagnosis and Treatment of Digestive Diseases, by George M. Niles, M.D., Atlanta, Ga... 520

The "Nauheim" Treatment of Diseases of the Heart and Circulation, by Leslie Thorne Thorne, M.D., B.S., London . 521

Diseases of the Heart, by James Mackenzie, M.D., F.R.C.B. London, England 521

Medical Jurisprudence, A Statement of the Law of Forensic Medicine, by Elmer D. Brothers, B.S., LL. B., Chicago......... 625

The Tonsils, by Harry A. Barnes, M.D., Boston, Mass............ 625

Women and Morality, by a Mother; Men and Morals, by a Father; the Sexes Again, by C. Gasquoine Hartley (Mrs. Walter M. Gillichan) 625

The Infant Nutrition and Management, by Eric Pritchard, M.A., M.D., (Oxon), M.R.C.P. (Lond.) 626

Bulkley—The Feeding of School Children, by M.E. Bulkley.... 626

The Physicians' Visiting List for 1915 626

The Salvarsan Treatment of Syphilis in Private Practice, with some account of the modern methods of diagnosis, by George Stopford-Taylor, M.D., M.R.C.S., and Robert William Mackenna, M.A., M.D., B.Ch., Liverpool, Eng. 678

The Backward Baby, a Treatise on Idiocy and the allied Mental Deficiencies in Infancy and Early Childhood, by Herman B. Sheffield, M.D., New York 678

The Pocket Formulary, for the Treatment of Diseases in Children, by Ludwig Freyberger, J.P., M.D., Vienna; M.R.C.P., Lond.; M.R.C.S., Eng. 678

With Sabre and Scalpel, the Autobiography of a Soldier and Surgeon, by John Allen Wyeth, M.D., LL.D. 679